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THE BUILDER

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Hobman, A. C. W. & Co. Ltd.
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Gibson, Arthur L.
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THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

VOL. CXIV.—No. 3922. APRIL 5, 1918.

THE HOUSING COMPETITION AT THE R.I.B.A.

WE had intended to review the designs submitted in the Government Housing Competition, now on view at the R.I.B.A., but on reflection we can see no useful purpose in doing so. If we were testing students' knowledge of modern military science we should hardly propose that the weapons known at the time of Crécy or Agincourt should be those which should be assumed to be used in modern warfare, and yet this is precisely what the framers of the housing competitions held all over the country have assumed for the purposes of the competition. Modern versions of old plans are to be found in thousands, actually built all over the country, and it would be impossible to better the best of what has already been done by the London County Council and some other authorities—on the old lines. It may be that as a nation we are so inherently conservative and prejudiced that we are unwilling to accept anything better for several generations to come, and if this be so we may industriously produce small and picturesque modifications of what we have seen in the past generations, our only method being to add baths, sinks, and gas and hot-water pipes to the traditional cottage, and to give a greater run of shelving in its cupboards and pantries. We shall sometimes be troubled because it is difficult to make the new look like the old, because we find people want larger windows and more head-room, but we can, after all, get very nearly the old effect, and can then complacently congratulate ourselves on our skill. But if we are willing to adopt such a policy we shall not give the thinking public much reason to applaud either our skilfulness or powers of invention, and the term architect will in the end be held to be synonymous with archæologist, or perhaps architects may be described irreverently as being antiquated fossils.

We have learnt from Mr. Davidge that the finance of housing is a matter in which we have no concern. Let money be provided by the State somehow and let us talk at conferences, but let our ideals remain; let us forget what modern science and engineering skill have made possible, but leave us our dreams about the picturesque cottage framed with honeysuckle and roses and gilded by the rays of the setting sun; and let us, in heaven's name, believe that the public authorities will abandon their own technical advisers and give us 5 per cent. on 300,000 cottages costing £400 a-piece, which will produce £6,000,000 in architects' fees—a pleasing and not unremunerative sop for the profession which welcomes the State Socialism of the future! But if this picture is a little heavily outlined and we are not quite confident that we shall come out on the right side of the hedge, it may be as well to consider alternative methods and to give a little thought to what the progress of time has made possible and what the future will be likely to bring in its train. Each one of us is to be called upon to take his share in paying for these 300,000 cottages if the day of the private builder is to be arbitrarily ended, and if the increased wages of the working classes are to bear no share of the increased cost of building in the shape of rent. We are to invert the order of things, and the favoured classes are to be the poorest, to whose wants everyone else will have to contribute while they escape the burdens imposed on the shoulders of others. We must provide 300,000 cottages at once and the State must pay, and afterwards we must provide more, and more, and more; for we are to eliminate the private builder and in the end perhaps find him a cheap State cottage also. But if all this is to be (and, of course, we must take the word of the Government and the Housing and Town Planning Council as final), there yet remains one consideration which is important, and that is to build economically and to build with thought, without which our labour may be ruinously expensive to us in the end.

We cannot afford to believe, without experiment or trial, that the cottage of the past is the cottage of the future, or even the cottage of to-day. We cannot afford to consider that a fireplace in every room burning coal is the only reasonable means of heating, that we can get no hot water except by means of a boiler in connection with a kitchen range, when there are newer and better means of providing hot water economically. In building either a small house or a cottage we start with the fact that we are obliged to limit the area of the rooms for reasons of cost, and it becomes more necessary that every part of the space so provided should be efficiently ventilated and warmed. In cold weather the only part of a small sitting-room which is comfortable is a small half circle round the fire, while the only means of ventilation are afforded by letting in the cold air by opening a window. The greater part of the heat produced escapes up the chimney, adding to the smoke clouds which we deplore in our industrial towns. In the form of gas we are able to regulate heat and use it with less waste, while we eliminate the necessity for smoke flues, coal cellars and a great deal of unnecessary service and trouble. And gas is only one of many methods by which heat can be economically and conveniently used.

Again, as we stated last week, economy of space can be carried much further in the planning of our bedrooms provided they are used, as most of them are, for sleeping rooms only. What is necessary is that means should be provided for cross ventilating and warming them. There seems little reason why the bedroom should need furnishing with chairs which are never used, wardrobes which can be eliminated if an ample cupboard is provided, washing arrangements which can be replaced by more ample facilities in the bath-room, or rooms, which do away with the trouble of service. In urban areas there is no reason why hot water should not be drawn from a municipal supply, as has been done in America; but, even in country districts, such points can be simplified and rendered easier by many devices. And, apart from the problems involved in the fittings of kichens and sculleries, there is an immense field for study in the simplification of construction.

Do we want our cottages to last for centuries, when the population of the country, which only doubled in the centuries which separate the Conquest from the reign of Elizabeth, is now doubling itself in a short period of years and when industrial conditions are in a constant state of flux? We doubt whether it is economical to the community to consider that a given cottage should have a life of more than forty years. And if this be admitted, we are probably wrong in not making fuller use of ferro-concrete, patent roofing materials which are so light as to require a fraction of the timbering required for slates or tiles, and other materials which are now available. In short, we believe the competition which has been held has been based on entirely mistaken lines.

What we think should be done is to devise scientific dwellings of three types: In the first it should be assumed that gas is available at reasonable rates, in the second that cheap electrical power can be had, and in the third that neither of the foregoing means of obtaining heat and power are available; and that actual cottages should be planned to meet each case and examined by the authorities interested in the housing of the people.

NOTES.

The R.I.B.A. Housing Competition.

FOR reasons stated in our leading article it is not our intention to give a critical *résumé* of the designs submitted. Some of them, notably the beautiful sets of designs submitted by Mr. C. Wontner Smith, which we hope to illustrate later, possess very marked æsthetic quality, and show great appreciation of proportion and scale. The planning is good, especially when the limitations imposed by the problem—the production of an improved cottage closely based on old tradition—are adopted. Of the various schemes for different classes we like that for Class A best. The design for Class B, admirable in its way, is a little too much quaintly cut about in elevation, and the upper bay windows in the end blocks are obtained by a quite unnecessary expenditure in the way of roof. The design in Class C is admirably simple and effective. And that of Class D is another good type. Of their kind there is nothing better in the exhibition.

Other Competitors.

MESSRS. W. G. WILSON, John Newton, and D. G. Round send some pleasing designs for various types well and carefully worked out; and Mr. Courtenay M. Crickmer has worked on similar but even more utilitarian designs with sucessful results, avoiding the temptation to produce quaint or striking elevational features. Mr. Alfred Cox, who wins the prize for Class B, has produced a delightful design which would work out admirably in execution, and has shown the fallacy of the doctrine that the sash window is incompatible with picturesqueness of effect.

Other Designs.

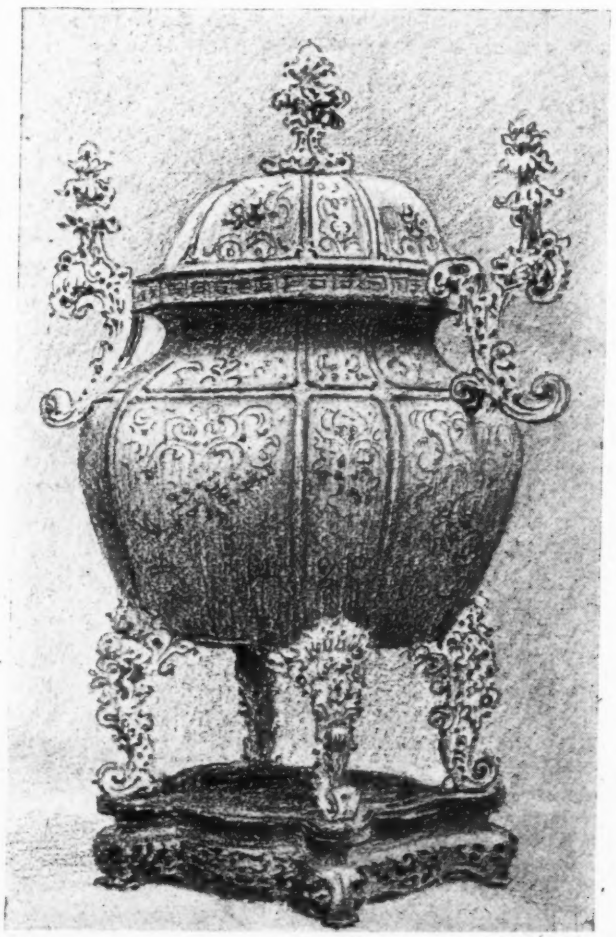
MR. L. WILKINSON has sent in a design for Class A which recalls the interesting work of Messrs. Adshead and Ramsey on the Duke of Cornwall's estate. The plans are simple and straightforward, and effect is gained by the trellised porches and slightly recessed arches which mark the projecting end blocks. Slate roofs are adopted, the two stories being below the low-pitched roof. Mr. H. S. East sends in a good design for Class A, but the elevation to the road is unnecessarily cut up into small parts. The author of design No. 328, for Class A, has submitted a scheme which is distinguished by good and simple elevations, and a similar criticism can be applied to the author of design 238, for the same class.

The Competition generally.

THERE are other designs which we might refer to as being commendable efforts on the part of the younger members of the profession, but nothing that in our opinion can be called a serious contribution to the solution of the housing problem. We are informed that in this respect many of the local competitions have been more successful. In our view this result is attributable to the fact that the competition has been based on wrong lines; that a very great proportion of the profession is away doing the greatest work of all at this crisis of our national history, and to the undoubted fact that architects have not yet realised that it is their duty to lead and not to follow; to solve problems before others show them the way to do so.

Employer and Employed: War Bonus.

A CASE, Stretch *v.* Scout Motors, Ltd., is reported in the *Weekly Notes*, March 30, which is of some importance. In March, 1915, a dispute having occurred between defendants and their employees in connection with wages, an agreement was come to that a 10 per cent. bonus should be paid on the wages at the end of the war, but it provided that "should any employee leave the service of this company for any reason between March, 1915, and the date of the disbursement, such employee will forfeit all claim to the war bonus." In June, 1915, a call for skilled workmen was made by the Minister of Munitions, and the plaintiff offered to enter into an undertaking to work at any controlled establishment, and his offer was accepted in July; but the plaintiff was not called upon until June 3, 1916, when he was transferred to a controlled establishment. The Munitions of War Act, 1915, was passed on July 2, 1915, the very day the offer of the plaintiff was accepted by the Minister of Munitions, and Section 6 of that Act makes it an offence for a workman to fail to comply with his undertaking, and for an employer to dissuade a man from entering into an undertaking, or to retain in his employ a man who has entered into such an undertaking, after he has received notice from the Minister to work elsewhere. The action was brought by the workman claiming a declaration that he was entitled to the war bonus from March, 1915, to June 3, 1916, payable at the end of the war. It was conceded by the defendants that the agreement was intended to refer to a voluntary leaving of the employers' service, but it was contended that the plaintiff's leaving was "voluntary," because he had made his offer to the Minister of Munitions before the Munitions Act was passed and when he was a free agent, *i.e.*, on June 26, 1915, and when there was nothing contrary to public policy in the agreement that he should forfeit the bonus if he left his employ. The Court held that when the plaintiff left the defendant's service (June 3, 1916) he did so in pursuance of an order which he could not lawfully disobey, and, therefore, not voluntarily.



[The beautiful incense vase (a Karo) which we illustrate was made in the Pekin manufactory for the Royal Palace in the eighteenth century. It is a remarkably fine example of cloisonné work and affords a striking example of how various influences combine to produce striking artistic results. Our sketch of this charming work was made from the original in the Gallery of Chinese and Japanese Art (Messrs. Yamanaka & Co.), 127, New Bond Street.]

TOWN PLANNING INSTITUTE.

PROFESSOR S. D. ADSHEAD presided on March 22 at No. 92, Victoria-street, S.W., over a general meeting of this Institute, when Lieut. R. L. Reiss, of the Ministry of Reconstruction, read a paper on "Reconstruction with Particular Reference to Housing."

Lieut. Reiss said that although he was working temporarily in the Ministry of Reconstruction, the suggestions he made must not be taken to represent the official policy of the Minister, but only his own views after careful consideration of the various proposals which had been made in different quarters. His view was that they did not want merely to reconstruct, but rather to construct afresh. Having dealt with the condition of housing before the war and the effect of the war, the author contended that a large building programme must be ready to be put into operation at the end of the war, whatever the cost and difficulties. He touched at some length on the possibilities of private enterprise and expressed the view that under the conditions which would exist at the termination of hostilities neither builders nor investors would commit themselves to building schemes. Having arrived at the conclusion that the primary responsibility for building must rest on the local authorities, he discussed the subject of the form in which the State should give such authorities financial assistance, and he suggested the best method was that recommended by the Royal Commission on Housing in Scotland. The proposal that new houses should be freed in part or in whole from the payment of rates and taxes he considered was merely giving a subsidy in a concealed form, but the same objection would not apply to levying rates upon land values in the case of all new houses and buildings erected after the war. This, however, if decided on, should apply not merely to working class houses, but to all houses and buildings. Without going into the general argument as to the rating of land values, it might be said that the case for such a proposal was greatly strengthened owing to the special circumstances created by the war. It would be unjust that, in addition to the other handicaps, new houses should be called upon to make a greater contribution to the rates than similar existing ones, and yet this would be the result under the present rating system, and, therefore, this system must be altered in some way. To levy rates upon land values only in the case of new houses and buildings would not only remove such a handicap, but would stimulate their erection at a time when they will be most needed. At the same time, to continue to levy rates on the present basis in the case of existing buildings would be no injustice to the owners, as the difference would be more than compensated for by the increase in the cost of building. Finally, it was clear that it would be necessary for the State to exercise control over the supply and prices of building materials. The demand would be much greater than the supply and the position would be similar to that in regard to food (aggravated by the existence of combines). There was a Committee on the subject of the supply of building materials now sitting at the Ministry of Reconstruction, and it was investigating the sources of supply and the steps which would have to be taken in order to secure a large supply after the war. He did not know what this Committee would recommend, but he suggested that it was quite likely that the State would have to purchase all building materials and distribute them at cost price (with a necessary addition for administrative expenses) in the same way as the State proposed to do with regard to potatoes. It must be remembered that this would not enable materials to be obtained at pre-war prices, but it would enable local authorities and others to obtain materials at wholesale rates not inflated by the action of combines. There were two other points which would have to be borne in mind and which were being considered by Sir Tudor Walters' Committee at the Local Government Board. The first was that considerable savings might be effected by standardisation, and the second that in the case of certain materials of which there was a short age (*e.g.*, timber), certain substitutes might be found. It had even been suggested that some of the large national munition factories might be adapted to produce standard parts for the construction of cottages which would enable them to get over the shortage of bricks and the anticipated shortage of bricklayers. If the proposals made, namely, for the State to bear the loss due to abnormal cost of building and the abnormal rate of interest; for rates to be levied on land values only in the case of new buildings; for the supply and price of building materials to be controlled; and for standard parts to be manufactured are carried out, then the disparity between the rents of new houses and those of similar ones built before the war would be considerably reduced. There will still be a considerable difference, but this must be regarded as inevitable. An increase in rents must be accepted as part of the general increase in the cost of living, and it must be seen that wages rise to a sufficient extent to enable this to be met. Whether the whole of the increase in existing rents which would accrue if the Increase of Rent Act were allowed to expire should be left to landlords was a different matter. Obviously it was fair that they should be permitted to recoup themselves for increased cost of repair and other matters, but there was a strong case for taking a large portion of the surplus increase by way of local taxation—on the lines of Excess Profits Duty. While it was impossible to *rely upon* private enterprise to provide the necessary houses, this did not necessarily mean that all the houses should be built by the local authorities themselves. Having regard to the urgent need for houses, it would be undesirable to rule out private enterprise altogether. The proposals made for controlling the prices of building materials and for levying rates only on land values in the case of new houses would assist private enterprise, as well as local authorities. But without actual financial assistance few houses would be built, whether by speculative builders, public utility societies, or otherwise. The question was, therefore, as to whether financial assistance to cover the abnormal cost of building could be given to private enterprise, and, if so, in what form and subject to what conditions. It was clearly desirable to encourage the work of public utility societies and co-operative societies, and he therefore suggested in the first place that, subject to necessary safeguards, such societies should be able to obtain 80 per cent. of their capital from the Government and also get similar financial assistance by way of grants to that proposed for local authorities. Such advantages might also be given to housing trusts not trading for profit. The difficulties, however, were greater in the case of the speculative builder and the individual investor. The speculative builder builds to sell. To assist him it would be necessary to enable him to find a purchaser for his house. There were obvious administrative difficulties in giving direct financial assistance to private individuals wishing to buy houses whether to live in or as an investment. But these difficulties might be lessened if the local authorities were used as the channel through which financial assistance was given. For this purpose the operation of the Small Dwellings Acquisition Act might be extended, and it might also be possible to utilise the building societies and the Banking Department of the Co-operative Wholesale Society as a means through which the State could advance money to private individuals, particularly to those desirous of purchasing their own houses. Whatever procedure was adopted it was necessary to secure:—(1) that the State assistance, whether by way of loans or of grants, to meet the inflated cost of building should only be made in the case of houses actually erected within a definite period after the war; (2) that it should only be given where the plans are approved and the lay-out of the land is satisfactory.

Lieut. Reiss said the circular of the Local Government Board outlining the Government proposals with regard to the form of financial assistance to be given to local authorities undertaking housing schemes had been issued since he wrote his paper. The proposals would go a long way to meet the difficulties of local authorities, but there were several statements which would encourage delay or inaction on the part of local authorities not really keen to embark on a large housing scheme. It was indicated that capital would only be forthcoming from the State if the local authorities could not raise their own loans. He did not think the local authorities could be blamed for not taking action under the circumstances. The fact that the local authority would have to bear 25 per cent. of the loss in capital value owing to building immediately after the war would also cause delay. Further, there was no indication that local authorities who did not take action where there was a shortage of houses would suffer in any way.

Mr. Raymond Unwin said Mr. Reiss emphasised the fact that the whole subject was linked up with the question of poverty. It was part of a consistent effort to raise the standard of life and happiness in the nation. This was not the ordinary housing problem or the housing of a few poor people who could not pay an economic rent, but was a great constructive proposal arising out of the war. All previous standards of wages and rents had been broken, and a new start had to be made. The great shortage of houses had been pointed out, but at the same time there was in the country an enormous surplus of bad houses. It was a good rule of economy that when there was a surplus of an article which was out of date there could hardly be a more extravagant or wasteful expenditure of money and energy than to add to it. A man who proposed to build four-wheeled cabs on the ground that there was a shortage of cabs and that the old growler cost less than the modern taxi would not be more foolish or wasteful than anyone who proposed to build the old growler type of dwelling after the war instead of building up-to-date houses. True economy would consist in using to the utmost all the skill they could mobilise, both brains and artistic gifts, to lay out housing areas on the right lines. In this great struggle, men of all sorts and conditions had messed and slept and suffered together. Let them do nothing to check this beginning of union. Every scheme of any size should at least provide opportunity for the erection of larger houses as part of the whole, and should at least reach such a standard of amenity that the smallest types of houses would afford no justification, by their lack of comeliness, for the well-to-do to live out of sight of them.

Major Lovelock pointed out that everyone was agreed that people working in London should be housed in the outskirts, and the result was that while the outer districts would provide houses the inside authorities of London would sit still and smile, as they had for years. He thought there would also be great objection on the part of the ordinary ratepayer to paying an additional 1d. rate for housing. The principle in the past was that public money must only be expended for the benefit of the whole community, but in this new proposal of the Local Government Board they were asked to add a penny rate specifically for the benefit of one class of the community. He felt that unless the proposals were more practical little would be done in the way of lessening the shortage of houses.

Mr. Walker (Chairman of the Housing Committee of the L.C.C.) remarked that the London County Council had housed people outside its own boundaries on its estates at Tottenham and Norwood, and it was its desire to do further work in that direction.

Mr. E. P. Culpin complained that there was no evidence of a real policy of reconstruction in the circular of the Local Government Board. There was no real breadth of vision which would make them think they were on the eve of a change in their methods of building. It was the social aspect of the housing problem which was of the greatest importance, and there was a full remedy for many of the existing evils in the full garden city principle. Every county should consider the policy of establishing real garden city schemes, and in Germany this was

being done. He was rather dismayed that at this time they had got such a reactionary circular from the Local Government Board, which did not show any wide outlook at all, and he hoped when it came before Parliament the Board would be forced to withdraw it.

Professor P. Abercrombie said it appeared as if the Local Government Board had not taken into consideration the reorganisation of the industries of the country in connection with the housing policy. If, for instance, the recommendations of the Coal Conservation Committee with reference to the supply of cheap electrical power were going to be carried out it would mean the allocation of industries to certain places and the consequent allocation of houses. In this connection there was special opportunity for garden cities.

Mr. Elgood suggested that housing commissions might be formed to suggest where houses were needed. It was significant that no one had spoken in favour of the very belated and much advertised Government scheme, which, he thought, would fail to meet even the object for which it was put forward. Without going into the question of the desirability of the rating of land values, he thought it a dangerous thing to suggest that two systems of rating could possibly exist side by side.

The Chairman said what seemed to be wanted was town development. In the Government proposals nothing was said as to the 700,000 houses unfit for human habitation. It was too much to expect that nerveless and incompetent people who had been used to driving in growlers would suddenly be able to jump into taxis. He felt that they wanted a stepping stone, although how it was to be done he could not say. There were thousands of dwellers in slum property who were quite incapable of taking on the duties and responsibilities of inhabiting nice houses, and that was a big problem which would have to be settled.

Lieut. Reiss, in reply, said, personally, he felt that in considering this whole question of reconstruction they must have regard to the allocation of industry, and the relation of housing to it. There was no reason, for instance, why aircraft factories should not be placed right in the country, and yet it was not done.

The Garden Cities and Town Planning Association.

At the quarterly meeting of the Garden Cities and Town Planning Association on March 27, Mr. W. R. Davidge, F.S.I., A.R.I.B.A., M.Inst.C.E., was presented with a collection of town planning and allied literature in recognition of his services as Chairman of the Executive Committee of the Association, and also of his Australian Town Planning Lecture Tour. Mr. Ewart G. Culpin, the Secretary, stated that the results of the tour which Mr. Davidge undertook were apparent in every Australian mail, where references were being made to the good accomplished. Mr. Davidge had started a work in Australasia which was still spreading, thanks to the efforts still being made by Mr. Charles C. Reade, the other emissary of the Association who remained in Australia as Town Planning Adviser to the South Australian Government. He mentioned that at the recent Australasian Town Planning Exhibition and Conference the following resolution was passed:—

"That the Australian Town Planning Conference and Exhibition place on record its thanks to the Garden Cities and Town Planning Association of Great Britain for its splendid achievement in arranging for the Australasian Town Planning Tour, 1914–15."

Mr. John E. Champney, in making the presentation, expressed the gratitude of all the members to Mr. Davidge for what he had done, but he thought possibly the greatest satisfaction to Mr. Davidge would be the fact that he had taken a great share in the starting of a new movement in a new Continent, which might bring incalculable benefits to future generations there.—Mr. Davidge suitably replied, expressing the satisfaction which the work had given him and hoping that the work of the Association would continue to progress as astonishingly as it had done during the last year or two.

FUEL ECONOMY IN COOKING APPARATUS.*

LECTURE I. (continued).

Introductory.

In order to understand the serious difficulty in calculating absolute results on a scientific basis, it is necessary to realise that the cooking of a piece of meat consists in the coagulation of the albumen and that this is accomplished by a rise in temperature. When every part of the joint has been raised to that temperature the joint is cooked. At any previous point of time the temperature varies throughout the meat. The outer skin is very hot and the temperature gradually falls towards the centre. The time necessary to heat the meat throughout by maintaining a high external temperature varies, of course, with the size of the joint. This time varies with the temperature. Whatever the difference may be between cooking for a long time at a low temperature and rapidly at a high one is no present concern of ours. It is no part of my present task to deal with the culinary aspect of this question. I have only to call attention to the intricate heat problems involved.

In order, therefore, that our result may be scientific—which is to say in order that we may be able to reproduce the experiment with substantially the same result time after time—it is evident that we cannot use for the actual test an undefined material of irregular shape and indefinite composition and conductivity like a joint of meat. We must have something identical in shape, in heat capacity and conductivity for two successive experiments. It would be impossible with a joint of meat to determine what was its mean temperature at the close of the process, and this is an all-important item of the suggested experiment, that is, the exact amount of heat which has been communicated to the object. Hence we must obtain an artificial substitute for the joint, for the purposes of our experiment. I suggest that this substitute should take the form of a cylindrical iron vessel of given weight and given dimensions, say 8 in. diameter by 6 in. high. This vessel should be filled with heavy oil, which is capable of being heated up uniformly to 400 deg. or 500 deg. without boiling or changing or giving off inflammable or other vapours. The vessel should be closed and the thermometer inserted into it. As these experiments will probably always take place in the laboratory of the manufacturing company, the thermometer might be an electrical one, specially suitable for such work as this. In reality this convention involves assuming an arbitrary amount of heat as being required to cook the joint in default of exact information on this point. It is probable that the ultimate temperature of the vessel would be the same for all ovens, though the rate of rise might be different. This convention would make the efficiency in each case inversely proportional to the total heat supplied. The actual or absolute values could not be determined without a careful physical determination of the amount of heat absorbed by the meat. This would vary with the process adopted, as also would, no doubt, the quality of the result. An error of a few per cent. in the absolute values would be of no great importance so long as the relative values could be relied on.

The course of the experiment would then be as follows:—

The oven being cold, its temperature determined at, say, 60 deg., the power should be turned on at an observed time, whether coal, fuel, gas or electricity would make no difference. The amount of power supplied should be measured either by weighing the coal or by passing the gas or electricity through a meter, and constant observations made by means of the electrical thermometer of the temperature in the interior of the oven. When the predetermined point of temperature, say 450 deg. F., has been reached a note should be made of the time, the amount of power consumed and other matters. If this time is much less or greater than the standard time previously determined on for this class of apparatus, the experiment should be repeated with increased or decreased power, such that the standard temperature is attained in the desired time. When this adjustment has been secured, the standard vessel already described should be placed in the oven and an observation maintained of its temperature. When the observation has been made of the amount of power consumed up to that point, the power supply should be increased or reduced so as to give the subsequently required temperature, which should then be maintained for the predetermined time. At the close of that period, observation should again be taken of the power consumed, and the experiment is complete.

The Value of the Oven Temperature.

One of the principal difficulties in this connection is to determine what is the actual temperature in the oven interior. Those who have actually tested ovens know that almost any temperature within a wide range can be obtained by a thermometer, according to the position in which it is placed. Particularly is this the case with a gas oven heated in the ordinary way. In this case the streams of hot products of combustion arising from the gas jets take a particular course. If the thermometer is placed in one of the main streams it will read high; in other positions, low. For the purposes of the test, therefore, it is necessary to maintain a constant circulation of the air within the oven by a stirring device operated by a small motor. Again, when an oven is heated by incandescent elements the character, size, and shape of the thermometer bulb have a marked influence on its reading, owing to the variable proportions of the radiated and convected heat impinging on the bulb. This is a very big question, into which I cannot enter here. Suffice it to say that we have means in the laboratory for the determination of the temperature which are independent of these considerations, and the temperature difficulty can be overcome by a skilled experimentalist.

There is no doubt that special care would have to be taken with solid fuel, because of the difficulties of control, and of the determination of the amount of fuel used. At the close of this experiment all power should be turned off, and careful observation taken of the temperature in the oven after the power is shut off, and also the temperature of the cooked object. A further experiment on the same oven would be, as previously suggested, to vary the temperature and run the experiment at four or five different degrees; the whole result should then be plotted on a chart similar to that on fig. 2, and this chart should represent the characteristic curve of the appliance in question.

I give a typical calculation, which might be made on the result of these observations.

TABLE III.

Example Test of Gas Oven.

Size of Oven .. 7 lb. nominal.

Water Equivalent of Cylinder of oil, 10.13 lb.

Initial Temperature .. 57° F.

Final " .. 339°

Difference .. 282°

B.T.U. delivered $282 \times 10.13 = 2850$ B.T.U.

Time. (min.)	Oven Temp.	Meter Reading	Difference cubic ft.	B.T.U. @ 480 B.T.U./ft.³
0	57	5,467	0	0
20	380	5,500	43	20,100
27	450	5,517	50	24,000
50	350	5,528	61	29,200
140	350	5,546	79	37,800

Efficiency $\frac{2850}{37500} \times 100 = 7.52$ per cent.

1. B.T.U. required to raise oven (empty) from 60° F. to 450° F. in 15 min. = 19,500.

* Concluding instalment of the first of a course of lectures delivered at the University College, Gower-street, by Mr. A. H. Barker, B.A., B.Sc., on January 23, and subsequently. Instalments of the lecture were given in our issues for March 15, 22 and 29.

2. B.T.U. per hour necessary to maintain :—

200° = 1,800	350° = 4,400
250° = 2,600	400° = 5,700
300° = 3,400	450° = 7,600

3. Rate of cooling (cylinder in oven) :—

Minutes after shutting off gas.	Temperature of oven.
0	350° F.
30	220°
60	160°
90	130°
120	100°

Efficiency of "Open Air Cookery."

The practical determination of the efficiency of what I have termed "open air cookery" is much more difficult, indeed I doubt whether a scientifically satisfactory standard test could be devised. Open air cookery itself may be divided into two or perhaps three parts, one of which might be termed "frying," and another "toasting." The principles of economy for frying purposes will be essentially identical with those for boiling, though it would not be possible to lay down a definition of the expression "efficiency" in this connection; it would only be possible to determine how much heat it would be necessary to supply to the appliance in order to maintain a predetermined temperature in a frying pan of standard size filled, let us say, with the same oil as has been used for the previous experiment.

"Toasting" Efficiency.

The economy of the toasting process depends very largely on the radiating element. Toasting operations are effected principally by radiant heat.

If the apparatus converts a large proportion of the energy supplied to it into radiant heat, it will naturally be economical as a toasting agent. The only test, therefore, can be a determination of the proportion of the total energy of the fuel which is converted into radiant heat, and this, it seems, is the only possible scientific way of determining the efficiency of any device for toasting. This could be determined by placing opposite the radiant heating surface a blackened vessel or close coil through which water is kept flowing at a mean temperature equal to that of the surrounding air; a measurement of the amount of water, and its change in temperature would give the total amount of heat communicated to this vessel, while the total consumption of power would represent the other side of the account. A comparison between these would give the efficiency of the apparatus considered as a toasting agent.

"Boiling" Efficiency.

The efficiency of a boiling device is much more easily dealt with. It is merely necessary starting from cold to measure the quantity of power, and compare it with the amount of heat communicated per hour to a vessel of cold water of standard size and weight at various temperatures. The "running efficiency" could be accurately determined by comparing the rate at which water was evaporated from a boiling vessel with the power supplied. A convention on these points could easily be established.

Efficiency of Other Apparatus.

There are, of course, other cooking apparatus of which the efficiency might be determined, such, for instance, as steam cooking vessels, in which steam pressure is maintained in a jacket surrounding the vessel containing the food. But the expression "efficiency" is less applicable to devices of this kind because its value depends largely or exclusively on the means adopted for preventing the escape of heat; that is, the efficiency may be increased to an unlimited degree by an improvement in the non-conductivity of the casing. In making such a test we should be testing not the efficiency of the process, but of the non-conductivity of the casing. The important factor in this case would be the efficiency of the steam generator. The overall efficiency of a well-designed steam cooking plant is probably higher than of any other kind of cooking plant.

Similar remarks will apply to the efficiency of an electrical device for heating water, which would be necessarily 100 per cent. apart from the loss of heat caused by the inefficiency of the non-conductor employed. In all such cases the efficiency is merely a measure of the perfection of the coating or heat-resisting devices used and not a measure of the perfection of the process itself, which is necessarily 100 per cent.

Efficiency of Hot Plates.

The efficiency of such a device as a hot plate would be the ratio between the heat given off to the air from the exposed hot plate maintained at a constant temperature as compared with the amount of power necessary to maintain that temperature; this experiment need not have a time limit. Nor for the purposes of comparison should it be necessary to reduce the figure to an absolute efficiency, for it would be difficult to determine exactly what was the amount of heat lost from such a surface. One such experiment carefully conducted, however, would give, with some accuracy, the standard rate of heat lost from a horizontal polished surface per square foot, or, preferably, for a standard size of hot plate, since the loss of heat per square foot would vary considerably with the dimensions. That is to say to double the size of the hot plate would not double the loss of heat from it. For a satisfactory definition of commercial efficiency here we need only to find the cost in heat energy per square foot of surface maintained at the stated temperature.

These conditions seem to cover most of the cases where the expression "efficiency" could in a scientific sense be applied to the result of these calculations for all ordinary cooking processes. They are so standard in character that they need not involve any discussion between the various interests concerned as they would be equally fair to all. If they were adopted as a standard, any appliance could be estimated at its true value from the point of view of fuel economy, given only the characteristic curve and the efficiency figures concerned. The only persons who need have any objection to these figures would be those who are trading on the ignorance and lack of precision which characterise this subject at the present time. It would be easy for any person to determine whether coal, gas or electricity was cheaper for his purpose merely by a careful consideration of the figures which these experiments would supply, and a comparison with the respective advantages of the agents used; and that is the main object of these proposals.

As the object of these lectures is to consider principles I do not propose to give figures of efficiency of the various agents, but only to suggest that figures obtained on these principles should be authoritatively laid down by a competent testing authority, so as to enable the public to see how they stand.

LONDON COUNTY COUNCIL.

A meeting of the London County Council was held on March 26, in the County Hall, Spring Gardens, S.W., Mr. R. C. Norman, chairman, presiding.

Loan.—Sanction was given to the borrowing by the Hammersmith Borough Council of £5,879 for electricity purposes.

List of Rates of Wages and Hours of Labour—Hot-water Fitters.—It was agreed that the Council's list of rates of wages and hours of labour be amended by the addition of the following to the existing footnote to the trade of hot-water fitters :—

> These workmen are further entitled to a bonus of 12½ per cent. on earnings, in accordance with an award, dated February 12, 1918, of the Committee on Production.

Re-numbering and re-naming of House, Kensington.—The Local Government Committee recommended that 1, Observatory-gardens, Kensington, be re-numbered and re-described as 74 Campden Hill-road.

GENERAL NEWS.

Deceased Builder's Estate.

Mr. Tom Horsfall, of Ings House, Liversedge, Yorks, builder and contractor, has left estate valued at £48,435 gross, with net personalty £21,403.

Change of Address.

The London Master Builders and Aircraft Industries Association have removed their offices to 48, Bedford Square, W.C. 1. Telephone No. Museum 3480.

Metropolitan Water Board's New Offices.

The Government having requisitioned the offices in Savoy-court, the Metropolitan Water Board have now removed to their new Central offices, South-place, Finsbury-pavement, London, E.C. 2. The Board's telegraphic address will be "Water Board, Ave., London," and the telephone numbers, London Wall, 6687–91.

Competition for Cottages and "Living-in Quarters," Wales.

Designs are invited for cottages and "living-in quarters" for agricultural labourers in Wales. A premium of £50 is offered for the best design in each of three types or classes of cottages, and a premium of £10 for the best design of "living-in quarters." Conditions may be obtained from the Secretary of the Welsh Housing and Development Association, Mr. Edgar L. Chappell, 38, Charles-street, Cardiff, or from Mr. Philip Thomas, General Secretary of the National Eisteddfod, "Glynifor," Neath.

An Industrial Garden City.

At the quarterly meeting of the Garden Cities and Town Planning Association, Captain G. S. C. Swinton outlined a scheme for an industrial Garden City to be constructed in connection with a proposed Forth and Clyde ship canal. The enormous strategic and economic advantages of the canal were pointed out, and it was urged in the discussion that this was the greatest opportunity the nation had had of constructing a new industrial community on perfect lines, which shall be assured of complete success, inasmuch as the biggest ships of the world will have access to its wharves. Another advantage urged was that at least 100,000 men could be put on to the work at once, and their numbers many times increased in a short time, thus assisting materially in demobilisation problems.

The Government and Housing After the War.

Under the auspices of the National Housing and Town-Planning Council, a two-days' conference has been held at the Caxton Hall, Westminster, to consider the problems of housing and town planning within an area of thirty miles from the centre of London. Mr. Hayes Fisher (President of the Local Government Board) welcomed the delegates. No doubt, he said, they would like to know exactly what the Government meant by the offer contained in his circular of July 28 last of substantial assistance to those local bodies which were prepared to build after the war. He could not make a definite statement on this point, but he could give them the very satisfactory information that the War Cabinet had had this matter before them within the last two days, and had decided to allow him to issue a further circular in which he would say precisely what was the sum and substance of the financial assistance the local authorities might expect. He thought when they saw this circular they would say that the Treasury had treated the local authorities well, and that the bargain offered to them was an attractive one. The local authorities must expect to take some little risk; but he thought they would find that it was not a substantial risk. He would, he hoped, shortly introduce into Parliament a little Bill which would provide him with power, where local authorities failed to give him adequate help in solving this problem, to bring in other bodies.

Leading Contents.

	PAGE.
THE HOUSING COMPETITION AT THE R.I.B.A.	207
NOTES	208
TOWN PLANNING INSTITUTE	209
FUEL ECONOMY IN COOKING APPARATUS	210
MEETINGS	212
LEGAL SECTION	213
CORRESPONDENCE	214
THE BUILDING TRADE	215
THE PRESENT CONDITION OF THE BUILDING TRADE	215

ILLUSTRATIONS.

Design for Memorial Plaque.

We illustrate the accepted design for a memorial plaque to be cast in bronze, which is to be given to the next-of-kin of those who have fallen in the war. The design is dignified and simple, though it seems a little wanting in force. The size and type chosen for the lion have been criticised, and possibly justly so. The type adopted suggests an Assyrian prototype.

Municipal Housing, Liverpool.

Liverpool is one of the cities in which the housing question has assumed unusual urgency, owing to the great rate at which the city has grown and the large volume of casual labour employed there in connection with shipping and other factors. Fifty years ago it was estimated that there were 22,000 insanitary houses in the city, mostly situated in courts and alleys containing about 12 houses. These were of the back-to-back type, without through ventilation, the fronts of the houses being frequently not more than six feet apart. Such houses were without sanitary conveniences, two closets situated in the court being the only accommodation provided, while water had to be obtained from a stand pipe in the court. Most of these courts were approached by a tunnel often not more than three feet in width, while the ends of the courts were usually blocked up by high buildings. It has been estimated that more than one-fifth of the population of the city were housed in such quarters. How detrimental these conditions proved to be to the health of the people is shown in some comparative statistics taken in the three years 1913, 1914, and 1915—which were as below :—

	Insanitary Area.	Rate for Entire City.	Corporation Dwellings.
Births	39·59....	29·25....	53·31
Deaths ..	37·89....	18·5	27·82
Infantile Mortality	246·43....	134·93....	167·24
Phthisis ..	3·94....	1·5	1·67

The enormous reduction of the death-rate and the increase of the birth-rate in the better dwellings erected by the Corporation is a full justification for the progressive policy initiated by the Housing Department of the city.

The work of the Housing Committee has been primarily directed towards dealing with insanitary areas and was initiated under the Act of Parliament entitled "The Liverpool Sanitary Amendment Act, 1864," and in the preamble of the bill it was stated that "fevers and other diseases are constantly generated there, causing death and loss of life, not only in the courts and alleys, but also in other parts of the borough," which indicates the primary objects of municipal housing in Liverpool, while the result of the policy of clearance has been shown by the statistics which we have quoted. Up till 1896, the Corporation, while purchasing insanitary housing for purposes of demolition, did little in the way of housing for those displaced. In 1869, a block of tenements, 124 in number, called St. Martin's Cottages, was erected, and in 1884, 282 tenements, called Victoria-square, were built. Juvenal Buildings, consisting of 102 tenements, followed in 1891; but, although builders who purchased the insanitary property compulsorily demolished did so on the understanding that they would erect other working-class property in their place, it was found that these were usually occupied by a better class of tenants, with a result that remaining insanitary property was more in request than before. Of 22,000 houses scheduled, less than 2,600 now remain to be dealt with. 11,000 houses have been demolished by private enterprise to make room for improvements, the remainder having been dealt with under the local Act mentioned, the Housing of the Working Classes Act of 1890 and by Closing Orders under the provisions of the Housing and Town Planning Act of 1909.

The various schemes we illustrate have been carried out in recent years as is shown in the following table, giving the dates and numbers of tenements erected :—

		Tenements.
1869	St. Martin's Cottages	124
1885	Victoria-square	282
1890	Juvenal Buildings	102
1897 and 1902–3	Arley-street	46
1897 and 1904	Gildart's Gardens	229
1901	Dryden-street	182
1902	Kempston-street	79
1902–3	Kew-street	114
1902–3	Adlington-street	272
1904	Mill-street	55
1904	Stanhope Gardens	60
1904–7	Hornby-street	455
1905	Clive-street	84
1905	Elden-street	12
1905–6	Upper Mann-street	88
1909	Combermere-street	49
1910	Burlington-street	114
1911	Grafton-street	60
1911	Saltney-street	48
1912	Bevington-street	224
1913	Northumberland-street ..	68
	Tenements ..	2,747

The majority of the persons displaced in the Hornby-street scheme were rehoused in the new Hornby-street Dwellings (built in three sections), while those displaced in the Burlington-street scheme were nearly all accommodated in the last section of the Hornby-street New Dwellings. Those displaced from Bevington-street area were rehoused in the Burlington-street Dwellings, as well as subsequently in the new Bevington-street Dwellings. In the case of Adlington-street, Upper Mann-street, Grafton-street, and the Northumberland-street schemes, the persons displaced were found accommodation in existing available tenements as well as new dwellings on these sites.

In May, 1905, a scale of rents was adopted, upon which the rents of tenements subsequently built were based, these being as follows :—One-room tenements : Ground floor, 2s. 6d. ; first floor, 2s. ; second floor, 1s. 6d. ; third floor, 1s. 6d. Two-room tenements : Ground floor, 3s. 6d. ; first floor, 3s. ; second floor, 2s. 9d. ; third floor, 2s. 6d. Three-room tenements : Ground floor, 4s. 6d. ; first floor, 4s. ; second floor, 3s. 9d. ; third floor, 3s. 6d. Four-room tenements : Ground floor, 5s. 6d. ; first floor, 5s. ; second floor, 4s. 9d. ; third floor, 4s. 6d.

These rents include the use of a scullery and w.c. for each house.

Taking the Bevington-street scheme as a type, the living rooms are in no case less than 160 superficial feet in area, or about 14 ft. by 12 ft., the first bedroom 130 to 150 feet super., or 13 ft. by 10 ft. 6 in., the second and third bedrooms 100 to 120 super. feet, or 12 ft. by 9 ft. 6 in. The sculleries are about 80 feet super. and fitted with a wash boiler and sink. In the four-roomed dwellings a bath and independent hot-water supply are provided. Cupboards and shelving are liberally supplied in all rooms and a food locker in the living room ventilated into the outer air. Each tenement has its own yard approached through the scullery, and dust shoots are placed in this yard space. The dust shoots are built in brickwork 3 ft. by 3 ft., and are of the full height of the buildings, set at a 45 deg. angle to main block and kept 6 ft. 6 in. away from the tenements. Patent automatic hoppers are fitted in the side of same for each tenement, which, when filled and closed, discharge the refuse into galvanised removable dustbins, which are cleaned out at regular intervals by the Corporation.

A feature of many of the schemes we illustrate is the provision of playgrounds and recreation spaces, and in some cases band stands and shelters, under which are placed underground sanitary conveniences, communicating with the special playgrounds for boys and girls. The Corporation band gives performances for the benefit of the tenants at intervals, and the gardens are kept open till dusk and are under the control of the authorities.

The construction of the dwellings is fireproof, the subfloors consisting of breeze concrete 7 in. thick reinforced by steel joists at 3 ft. intervals and finished on the top with 1¼ in. flooring boards nailed to same. These boarded floors are fixed in the living room and bedrooms, the remaining floors being finished with smooth granolithic.

The majority of the tenants use oil lamps, but one position for gas is provided in the living room and best bedroom, gas being supplied through automatic meters.

Liverpool has for many years rated itself for the erection and maintenance of these dwellings, believing that the interests of all are served through the accruing advantages obtained to the health of the whole community. Up to December, 1913, the total cost of demolition (under the Sanitary Amendment Act) was £306,095 17s. 8d., the amount expended under the Housing of the Working Classes Acts was £857,369 13s. 5d. The total cost of housing and demolition amounted to £1,163,465 11s. 1d., of which sum there was a balance of £743,910 8s. 10d. still owing. The interest and sinking fund on this sum amounts to £45,877 6s. 9d. per annum, and deducting the net receipts, amounting to £11,646 4s. 6d., there remains an adverse balance of £34,231 2s. 3d., which is the present net charge per annum on the whole of the work, and is equivalent to 2¼d. on the rates.

As the work we have described may be said to be strictly necessary and similar work must be done in many centres, an additional reason remains for removing every possible obstacle from the path of the private builder and speculator in order that the field of municipal housing may not be unnecessarily enlarged.

We would in conclusion draw attention to the able and skilful planning shown in these schemes, which our readers will be able to appreciate from the drawings illustrated. The elevational treatment is pleasing and varied, though opinions may differ as to the advisability of introducing the half-timbered features, but they have a particular local appropriateness in such counties as Lancashire, Cheshire and Shropshire.

Almost the whole of the work of the Corporation has been carried out from designs of Mr. Turton, the able Director of the Liverpool Corporation Housing Department.

We shall hope in a subsequent article to deal with Municipal Housing in Dublin.

MEETINGS.

MONDAY, *April* 8.

Incorporated Clerks of Works' Association.—Annual meeting 6.45 p.m.

TUESDAY, *April* 9.

Birmingham Photographic Society.—Mr. James A. Swan on "Ypres and Mediaeval Flanders."

Institution of Civil Engineers.—Mr. Edward Sandeman, M.Sc., M.Inst.C.E., on "The Derwent Valley Waterworks." 5.30 p.m.

WEDNESDAY, *April* 10.

Royal Institute of British Architects.—Professor W. R. Lethaby on "Relations of Architecture and Engineering (Conference with Engineers)." 3 p.m.

Carpenters' Company.—Mr. M. C. Duchesne on "English Timber and the Safety of the Realm." 7.15 p.m.

Northern Architectural Association, Newcastle-on-Tyne.—Annual general meeting. 5 p.m.

THURSDAY, *April* 11.

Society of Architects.—Ordinary meeting. 6 p.m.

LEGAL SECTION.

NOTES ON CURRENT CASES.

Landlord and Tenant. Under-lessees.

THE recent case, Hurd and Others *v.* Whaley and Others (*Weekly Notes*, February 23), raised some interesting questions as to the right of sub-lessees to relief where the ground of forfeiture is the breach of covenant to repair.

By an indenture dated August 20, 1863, the plaintiff's predecessor in title had demised a parcel of land in Battersea, on which five houses were being erected, numbered 23, 25, 27, 29, and 31, to W. Whaley for a term of 98 years. The lessee covenanted for himself and his assigns that he would repair the houses, paint the outside wood and iron work once in every three years, and the inside once in every six years, and there was a proviso for re-entry for any breach of covenant.

In November, 1916, the reversion expectant on the lease being then vested in the plaintiffs, and the lease being vested in James O'Mahoney, Thomas Saunders being in possession of Nos. 23 and 25, under a sub-lease containing like provisions as to painting and repairs as the head lease, all the houses were in a state of bad repair; No. 31 seriously so; and the plaintiffs served on O'Mahoney a notice under section 14 of the Conveyancing Act, 1881, of the breaches of covenant, but as it was not complied with the action was brought to recover possession.

O'Mahoney applied for relief under subsection 2, section 14, of the Conveyancing Act, 1881, and relief was granted to him on certain terms; but as he was unable to comply with them, an order was made against him that the plaintiffs were entitled to possession of the demised premises. Saunders had also appeared as a defendant, and he counterclaimed for relief under section 4 of the Conveyancing Act, 1892.

That section provides that where a lessor is proceeding by action to enforce a right of re-entry or forfeiture under any covenant in a lease the Court may, on application of any person claiming as an under-lessee, make an order vesting for the whole term of the lease, or any less term, the property comprised in the lease, or any part thereof, in any person entitled as under-lessee, on such conditions as under the circumstances the Court shall think fit.

This Act has to be read as one with the Conveyancing Acts, 1881 and 1882, and it has from time to time been argued that it could only apply in the case of under-lessees where a remedy was given by these Acts to a lessee. In Imray *v.* Oakshette (1897 2 Q. B. 218) this contention was negatived, but from some expressions used by Lord Justice Lopes in that case, that to obtain relief an under-lessee must be in a position to show that he is blameless, it was contended in the case under consideration that relief should not be given, as the under-lessee had allowed the houses in his possession to get into disrepair. The Court did not accept this contention, but granted relief.

In the brief report of Hurd's case in the *Weekly Notes* the distinction between that case and Imray's is not apparent, and it might be thought that the distinction lay in the fact that the latter case was one for relief from forfeiture for breach of a covenant not to assign without permission, and as relief could not be given to a lessee in such a case under the Act of 1881 neither could it be given to an under-lessee under the Act of 1892. As the case is important to under-lessees we may point out that that is not the real distinction. The Court of Appeal in Imray's case declined to limit the operation of the Act of 1892 to cases in which the Act of 1881 applied to lessees, but they held that the relief must be administered with caution and sparingly in such cases; and Lord Justice Lopes then said that the under-lessee must be in a position to prove that he was blameless. That meant that as a breach of a covenant not to assign without leave was different from a breach of other covenants, in that the parties when once the breach had been committed could not be put in the same condition again as before the breach, as a rule the relief should only be granted where some act or omission of the lessee was in question, or the under-lessee was innocent. But the under-lessee in that case was not blameless, because he had not exercised due care in examining the title, and there were facts in his knowledge that should have put him on inquiry. In a later case, Gray *v.* Bonsall (1904 1 K. B. 601), it was argued that the Act of 1892 did not apply to relief from forfeiture for non-payment of rent because section 14, subsection 8, of the Conveyancing Act, 1881, provides that "this section shall not affect the law relating to re-entry, or forfeiture, or relief in the case of non-payment of rent," and as the two Acts have to be read as one the Act of 1892 could not apply. The Court of Appeal, however, approved the decision in Imray's case, and laid it down that section 4 of the Act of 1892 was a general enabling clause by which the Court is empowered to give relief to an under-lessee in the case of forfeiture under any covenant, proviso, or stipulation in a lease, on such conditions as to the court may appear just.

We trust we have made it clear that under-lessees can apply for relief from forfeiture under the Conveyancing Act, 1892; that relief can be given them even in cases where a lessee could not obtain relief under the Conveyancing Act, 1881, but that where the covenant the breach of which is complained of is one not to assign without leave the relief will be most sparingly administered.

Landlord and Tenant: "Good Condition and Repair."

A Divisional Court, in the recent case Jones *v.* Joseph (*Weekly Notes*, February 23), decided a somewhat unusual point. In 1910 the plaintiff and defendant were in negotiation as to the letting of certain premises, and the plaintiff sent to the defendant a draft agreement providing for a tenancy from year to year, and that the tenant "shall keep the premises excepting the roof and outside walls in as good repair and condition as the same are now in, reasonable wear and tear excepted." The defendant never signed the agreement, but he went into possession and remained in possession (save that he sublet the premises) until 1916. While his sub-tenant was in occupation, the premises became verminous with bugs, and the action was brought by the plaintiff for damages for not having kept the premises in as good repair and condition as they were in at the time of the letting; or, in the alternative, for breach of an implied stipulation arising out of a tenancy from year to year to keep the premises in tenantable condition.

The County Court Judge had held that, as there was no concluded contract between the parties, the claim could not be maintained; but the Divisional Court held that, having regard to the correspondence and the conduct of the defendant after taking possession, the only inference that could be drawn was that the tenancy was upon the terms of the written agreement, and, as the premises were not delivered up in as "good repair and condition" as they were in at the time of the letting, the plaintiff was entitled to succeed on his claim for damages as a breach of the express agreement.

This made it unnecessary to consider the question as to the implied stipulation.

Contracts and the War.

As we have recently been writing on the question of contracts and the effect of the war upon the obligations imposed upon parties under their contracts, we may briefly refer to what we believe to be one of the first reported decisions under the Courts (Emergency Powers) Act, 1917, the provisions of which we considered in two articles in these pages on August 3 and 17. The case Gans Steamship Line *v.* Celtic Shipping Co. (*Weekly Notes*, March 2), turned upon Section 3 of the Act, which, as we pointed out, is wider in its terms than the previous section, as it relates not to statutory restrictions but to action taken by Government Departments, and deals with the "non-fulfilment" of contracts as follows: "Where before or after the passing of this Act the non-fulfilment of any contract (not being a contract of tenancy) was or is due to the compliance on the part of any person with any requirement, regulation, order or restriction of any Government Department, or of a competent naval or military authority, made, issued or given or imposed for purposes connected with the present war, or with any direction or advice issued or given by any Government Department with the object of preventing transactions which, in the opinion of the department, would or might be contrary to national interests in connection with the present war, proof of that fact shall be a good defence to any action or proceeding in respect of the non-fulfilment of the contract. A certificate by the appropriate Government Department shall be sufficient evidence that such direction or advice was issued or given with such object as aforesaid."

The defendants had chartered a certain ship to the plaintiffs for trans-Atlantic voyages, and the plaintiffs had directed her in accordance with the charter to proceed to Rotterdam. On her arrival in the Channel, the Admiralty suggested her diversion to a United Kingdom port, and she went to Falmouth and abandoned the voyage. The plaintiffs brought the action for breach of charter, but judgment was given for the defendants under the section. It should, however, be noted that the defendants had omitted to disclose the certificate to the plaintiffs, and the Judge pointed out that, when a certificate is received, it should at once be disclosed to the other party to enable him to consider his position.

Workmen's Compensation: "Partial Incapacity."

In our issue December 21 we referred to a decision in the House of Lords in the case Woodilee Coal and Coke Company, Ltd., *v.* M'Neill (1918, A.C. 43), which turned upon paragraph 1 (3) of the First Schedule to the Workmen's Compensation Act, 1906, relating to the weekly payments to be paid in cases of partial incapacity; and in that case it was held that a rise or fall in wages is an element to be taken into consideration in computing the difference of the average weekly earnings of the workman before the accident and the amount which he is earning or is able to earn after the accident.

It must be remembered that the Act provides by Schedule 1 par. 1 (*b*) that where total or partial incapacity results from the injury the weekly payment during incapacity shall not exceed fifty per cent. of the average weekly earnings as ascertained under the Act, but also that such weekly payment shall not exceed £1; but there is a further provision as to these weekly payments in paragraph 3: "In the case of partial incapacity the weekly payment shall in no case exceed the difference between the amount of the average weekly earnings of the workman before the accident and the average weekly amount he is earning or is able to earn in some suitable employment or business after the accident, but shall bear such relation to the amount of that difference as under the circumstances of the case may appear proper." The case above referred to related to this difference, and we made the point clear in our former note on the case, but we refer to it again because there has been another decision in the House of

Lords in the case Heathcote *v.* Haunchwood Collieries, Ltd. (1918, A.C. 52), which turns on the words, "which he is earning or is able to earn" in the above paragraph.

In that case the injured man had been earning 35s. at the coal face before the accident and at the time of the arbitration was earning 30s. as a carter, but the Arbitrator found that he could have earned a different sum as a packer or loader, and awarded him 5s. as the difference. The Court of Appeal had altered this award to the nominal sum of one penny, on the ground that the man could have earned more as a packer or loader than his earnings before the accident, but the House of Lords reversed the Court of Appeal on the ground that there was no finding that work as a packer had ever been offered to the man.

The Lords held that the words "which he is earning or is able to earn" deal with two sets of circumstances: First, the case where a man is doing some work, and in that case the question is simple, for the onus is laid upon those who impugn his capacity to show that he is not engaged to the best of his capacity. The second case is where the man is not doing any work, and that question involves the inquiry what work he could get with reasonable diligence.

It was again pointed out by the Lord Chancellor that the words at the end of the paragraph introduced for the first time in the Act of 1906, that the weekly payment "shall bear such relation to the amount of that difference as under the circumstances of the case may appear proper," enables the Arbitrator to take into account what the man would have been able to earn if the accident had not taken place as an element in arriving at whether he should award the whole difference or some less sum.

In the result the House accepted the sum awarded by the Arbitrator as representing the correct award, but not as based upon any speculation as to other work the man could have done if it had been offered him. He was earning 35s. before the accident and 30s. as a carter after the accident, so 5s. represented the whole difference.

LAW REPORTS.

War Losses Commission.
Lord Terrington and Immediate Reinstatement after Military Occupation.

THE importance of effecting reinstatement of premises in which dilapidations have occurred through military occupation immediately such occupation has terminated, was insisted upon by Lord Terrington (the Chairman), in a case which came before the Defence of the Realm Losses Commission, sitting at Spencer House, St. James's-place, London, S.W. It arose on a claim by the Trustees of Mr. R. J. Bagshaw for £136 6s. for dilapidations at Stourwell House, Dovercourt, which had been occupied by the military, and there was also a claim for rent of the premises in respect of a period for reinstatement.

Mr. A. J. H. Ward, solicitor, of Harwich, appeared for the applicants, and explained that the claim was in respect of a property which was before the Commission on April 25, 1917, when it was determined that a payment of £70 per annum should be paid by the War Office as from October 11, 1915. Shortly afterwards —on May 8—the premises were vacated by the military; and on June 2 claimants sent in a schedule of dilapidations amounting to £136 6s. There was considerable delay on the part of the military in dealing with the matter, and no payment was made in respect of the dilapidations —and this prevented claimants letting the premises in a repaired condition. As a consequence, they claimed rent at the rate of £70 a year from the date the military vacated until October 13, when the War Office again took possession.

Mr. S. G. Turner (on behalf of the War Office) said that on May 9 notice was given to claimants that the military had vacated the premises. Claimants might at once have got a surveyor to make a schedule of dilapidations and a builder to do the repairs, but they did nothing of the kind and now claimed that the occupation should be regarded as continuous. If the claimants had done as they ought to have done, the house, being letable, would have been in civil occupation, and notice to reoccupy it would not have been served upon them by the military. It was commonly said that they could not get labour or builders to undertake such work. Sometimes it was said that until they recovered the money for dilapidations from the War Office, they were not in a position to do the repairs, and that consequently they lost in inability to let the premises after military occupation. He submitted that neither of those grounds could be entertained by the Commission. It was obvious that the difficulty of getting labour in no way arose out of the War Department occupation, but arose out of conditions which obtained all over the country, in consequence of our being in a state of war. Similarly, the financial position of an applicant being such that he was unable to get credit from a builder, was not a matter which arose directly out of the occupation.

Lord Terrington observed that certain steps would be necessary. An applicant would, in the first place, send for an architect, or, if only a small place, he would send for his builder.

A War Office official said he thought it would have been possible to carry out the preliminaries and the work of reinstatement in eight or ten weeks.

Lord Terrington: Mustn't that be governed by the time of year? In the longer days, especially in the country, a contractor might get his men to work overtime, which would not be done in dark days.

The witness agreed such was the case.

Lord Terrington said it was an obligation of an applicant to immediately proceed to get dilapidations made out. It was not right to say: "I will wait until I get the money or until the War Office say they agree." What the Commission had to do was to ascertain loss or damage. It was the applicant's duty to minimise the loss or damage as much as he could by proceeding forthwith to make it good, after giving the War Office an opportunity, if they liked, to go and see what the position was. The action of a prudent man would be to throw the onus on the War Office of disputing his amount; he protected himself a good deal by giving the War Office notice to go and examine it themselves. If they were too busy to do so, so much the worse for them if they disputed the amount. It was said in this case that the claimants should have carried out the reinstatement in three months.

Mr. Ward said it was not till September 7 that the War Department valuer intimated that he had completed his valuation of the dilapidations, and that the matter was being reported to the Losses Commission.

Mr. Turner: The pricing wasn't done; that's all.

Lord Terrington (to claimant's solicitor): If they specially request you not to proceed with the work, of course, that is another matter. The duty of the applicant is to go and get the work done as quickly as possible, and we have to consider what would be a reasonable time to allow supposing he did fulfil his obligation. Your business is to get on with the work or to say: "Well, that is the estimate, and that is the amount," and if you don't proceed to do the work you mustn't say you have kept the place on so many months, and then claim that as part and parcel of your damage. We have to consider what is a reasonable time for you to reinstate and make good the premises, commencing from the day the occupation ceases.

Mr. Turner said that in regard to the claim for dilapidations the War Office recommended only a slight deduction—£124 18s. 8d., instead of £136 6s.

Mr. Ward said he was prepared to accept £124 18s. 8d. on behalf of his claimants.

After deliberation in private, the Commission awarded the agreed amount (£124 18s. 8d.) for reinstatement of the damage done to the premises during the occupation up till May 8, 1917, and at the rate of £70 per annum from May 8 till August 8, 1917, being three months' allowance for effecting reinstatement. The Commission also awarded at the rate of £70 per annum (plus an indemnity against rates and tenant's taxes) from October 12, 1917, to the end of the occupation, as well as £5 5s. towards the expenses of the whole claim.

CORRESPONDENCE.

The Bolton School Competition.

SIR,—In your comments in the particulars of this competition, after expressing your appreciation of the way the conditions are drawn, you refer to the possibility of a second competition as "a pity and a mistake." Clause 4 in the condition states: "The Trustees and Lord Leverhulme *may* at their discretion, and if thought necessary on the advice of the assessors, select designs from the preliminary designs, the authors of which *may* be invited to submit final designs, and each of the architects submitting a design in accordance with the conditions in the final competition will receive a honorarium of 50 guineas in addition to the premiums hereinafter mentioned. The trustees may take such other steps as the assessors may advise are necessary to carry out their intentions, but in no event will there be more than six designs if a final competition is found requisite."

We trust there will be a design submitted in the preliminary competition of such outstanding merit as to make a final competition unnecessary.

BRADSHAW, GASS & HOPE.

Bolton.

The National Cottage Competition. Southern Area.

SIR,—I was one of the architects who sent in plans for this competition, after perusing the conditions and answers to queries, which satisfied me, especially as economy was emphasised, this being a most important consideration, as the cottages were to be built out of public funds.

I find, however, on examining the successful plans that the cubic contents work out at 10,300 ft., which, in my opinion, and that of other architects, involves an expenditure which, in the interests of public economy, is not justified.

If I refer to my own design it is merely to illustrate my meaning, and because it is the only plan with the details of which I am fully acquainted.

The plan complies with all the conditions and requirements and worked out at 7,300 cubic feet. The difference between the successful plan and this plan involves an increased expenditure of one-third—a serious matter in view of the extensive nature of the work to be carried out.

I may point out that the allowance for cottages of the same class planned for the Local Government Board and the London County Council work out at about 7,800 cubic feet.

The matter is one of such public importance that I felt it my duty, in the public interest, to send you the particulars.

J. HATCHARD SMITH.

6, Duke-street, Adelphi.

Home-Grown Timber Prices.

The Board of Trade have issued a new Order as to maximum prices for home-grown timber, replacing the Order dated December 4, 1917. The principal changes made are in the prices for converted softwoods, but provision is also made for the certification of port or city sawmills by the Controller of Timber Supplies, to whom early application for the necessary forms should be made to obtain the benefit of the Order. Applications should be addressed to the Controller of Timber Supplies, Caxton House, Tothill-street, Westminster, London, S.W.1, and envelopes should be marked, "mill certificate."

THE BUILDING TRADE.

THE PRESENT CONDITION OF THE BUILDING TRADE.

The following statement has been issued by the London Master Builders' and Aircraft Industry Association:—

The Council of this Association considers that it is essential that the present condition of the building trade should be realised and understood.

Since the commencement of the war, wages have been increased by nearly one-half in the case of the labourers and one-third in the case of the skilled trades, all classes having received the same actual increase. Practically all the workmen are working overtime, and for a sixty-hours week the skilled trades are receiving £4 and the labourers £3. The reason for this increase has been the greatly enhanced cost of food and clothing, which items (according to a prominent trade union official) represented between three-fourths and two-thirds of the pre-war expenditure of the workmen. So that (exclusive of overtime), the money available for food and clothing has been increased in the skilled trades by over 45 per cent., and in the unskilled trades by over 60 per cent.

Without expressing any opinion as to the adequacy of such increase, suffice it to say that the whole circumstances were before Sir Wm. Robinson when he gave his award in October last, and since that date there has been no general increase in the cost of living. Certain Government departments have, however, adopted a disconcerting and bewildering course of action—viz., the bestowal of benefits on certain particular works to certain particular trades in the form of allowances for expenses, or for what is known as "wet time," with the result that these bonuses are given on some works and not on similar neighbouring works; whilst on some works certain trades are favoured with these special allowances and other trades on the same works have no such privileges. The pledge given at the outbreak of the war by the Prime Minister that trade working conditions should remain intact during the period of the war is thus openly violated.

Some simple-minded and inexperienced official in giving the dole of 6d. per day (or in some cases 1s. per day) to a small group of workmen for travelling expenses to their work in the heart of London, imagined that this benefit could be limited to the favoured few; but already claims are before the Committee on Production for the extension of this bonus to all munitions works, which, to judge by past experience, must speedily involve the very limited building works remaining.

The Council recognizes that industrial peace is essential in time of war, but it is obvious that no system could be more dangerous to industrial peace than the policy which is now being pursued. It creates justifiable jealousy and resentment amongst the workmen and indescribable confusion amongst employers, whose pay-sheets are becoming so complicated that it is almost beyond the wit of employer or employed to adjust them properly. To add to this confusion, the notorious additional bonus of 12½ per cent. has now been introduced into the building trade on certain Government contracts; whilst on other contracts that come within the wide definition of the Munitions Acts, this bonus is not applicable. Experience teaches that such a partial policy cannot endure.

The Council understands that this additional bonus of 12½ per cent. was never intended to apply to the building trade at all. No one asked for it; it came as "a bolt from the blue," to the surprise of all concerned; and, to make confusion worse confounded, it was made retrospective for about two months. It is at present intended to confine this 12½ per cent. bonus in the building trade to such contracts as were made direct with the Government, but already claims are made on nearly all building works, munition or otherwise, for equal treatment. Some men "butt in" where others fear to tread. These inexperienced persons still fail to realise that the workmen in the building trade are accustomed to just and equal dealings; they resent favouritism or preferential treatment to some favoured few who may be employed in some particular district or by some particular department. A typical instance has been reported as follows: The workmen in a certain joiner's shop, who are nailing together rough packing-cases, are entitled, under existing Government regulations, to 12½ per cent. higher wages than their fellow-workmen on adjoining benches who are making hardwood joinery to reinstate air-raid damage. Such is the effect of ill-considered interference. How far and how soon these paralysing conditions will permeate the whole trade no man knows, so all those whom it may concern should realize that it is not possible to frame even approximate estimates of the cost of building operations, and, moreover, it may become impossible to conduct business at all until some order is evolved out of this chaos. The situation must be as irritating to the workmen as it is to the employers, and it is pregnant with ominous possibilities.

The obvious remedy is the prompt establishment of some central authority to determine some definite rate of wage for each trade engaged upon munition works, that shall include all these indiscriminate bonuses and allowances created by percentage or otherwise, so far as they can be justified by existing conditions, and in view of the statement that there has been no general increase in the cost of living since the award of Sir Wm. Robinson in October last. Moreover, no Government department should be allowed again to tamper with any such authoritative decision.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

BOLTON.—Plans passed:—Additions to house, 511 Tonge Moor-road, for Mr. William Berry; store shed Back Bury-road, for Messrs. Moses Yates & Sons chrome leather factory, Weston-street, for Messrs William Walker & Sons; glazed porch, 195, Bridgeman-street, for Mr. E. W. Page; addition to tannery, Nelson-street, for Messrs. William Walker & Sons; reading room, Sunnyside Mills, for Messrs. Tootal, Broadhurst, Lee & Co.; alteration, All Saints-street, for Mr. Samuel Kay; additions to offices, St. George's-road, for Messrs. J. W. Dickinson, Ltd.; scullery, 8, Bowker's-row, for Messrs. Cope & Kenyon. Plans are before the Council for engineering works, Bridgeman-street, for Messrs. William Wadsworth & Sons.

CHELMSFORD.—The Housing Committee recommends that the borough engineer be directed to prepare and submit as soon as possible a scheme for the erection of additional working class dwellings on part of the land proposed to be acquired by the Corporation off Rectory-lane, or on such other site in the Borough as may be considered suitable for the purpose. Plans passed:—Heating chamber and tank, additions to pattern shop, cycle sheds, power house, Rectory-lane, for the Hoffmann Manufacturing Co.; motor garage, Broomfield-road, for Mr. W. G. Webber; office, Moulsham Lodge, for Mr. R. H. Currie; alterations to premises, 60, High-street, for Messrs. W. T. Osborne & Co.; additions to premises, 68, High-street, for Mr. C. E. Gosling; shed, Arc Works, for Messrs. Crompton & Co.; building, Writtle-street, for the National Steam Car Co., Ltd.

COVENTRY.—The Coventry City Council are considering a proposal to provide a Central Recreation Hall for the use and benefit of the citizens on the site of the Barracks-square.

EAST HAM.—Plan approved: Motor-house at rear of 847, Romford-road, for Mr. C. B. Walker. The Council have informed the L.G.B. that the following works are likely to be undertaken by them after the War (estimated amounts):—Formation of tanks and contact beds at the sewage works, £14,500; hospital extension, including administrative block, diphtheria block, discharge block, and alteration to existing nurses' home, £22,500; sewer in Katherine-road, £17,750; alteration of Destructor House, involving the provision of new boiler, £5,000; Housing Scheme: (*a*) providing for 197 houses, £80,970, (*b*) making up of streets, £2,656—£83,626; wharf and plant at Sewage Works, £3,000; surface water sewer, Boundary-road, £1,200.

EDINBURGH.—The Town Planning Committee of Edinburgh has had under consideration the circular from the L.G.B. regarding the provision of houses for the working classes after the war, and has remitted the matter to a special sub-committee and the Burgh Engineer to prepare plans.

FINGRINGHOE.—Repairs are to be carried out to Fingringhoe Bridge by the Essex C.C. at an approximate cost of £150.

GLASGOW.—The Health Committee is recommending that the City Engineer be asked to prepare plans for extensions of Knightswood Hospital and Bellefield Sanatorium.

HESTON AND ISLEWORTH.—Plans passed by U.D.C.: Billiard-room, 13, Lampton-road, Hounslow, for the Hounslow Conservative Club; shed, Hospital-road, for Mr. W. Lacey.

LEEDS.—The Improvements Committee of the Corporation has under consideration a communication from the Middleton Estate and Colliery Co. with respect to a proposed housing and town-planning scheme in the Middleton area.

LEICESTER.—A L.G.B. inquiry has been held into the application of the Council to borrow £10,000 for the purpose of erecting workmen's dwellings and the provision of allotments.

LONDON.—It is proposed to establish an auxiliary hospital at Holborn for presentation to the War Office, and an appeal is to be issued for subscriptions.

ORRELL.—A sub-committee has been appointed to consider and report as to suitable sites for the houses proposed to be erected by the Council after the war.

PENYBONT.—Penybont Council has decided to apply to the L.G.B. for powers to put the Town Planning Act into operation in their district.

PRESTON.—Plans passed by T.C.:—Sanitary accommodation, &c., for Messrs. Horrockses, Crewdson & Co., Ltd.; lavatories, Avenham-road, for Messrs. G. Hill & Sons; extension to bakery, Manchester-road, for Mr. Henry Heaton.

ROSYTH.—Dunfermline Dean of Guild Court has granted warrant to the Scottish National Housing Company, Ltd., to erect 40 dwelling-houses at Rosyth. The same petitioners received authority to convert a wooden hut into 16 shops.

SOUTHWARK.—Drainage plans passed:—For new warehouse, Cornbury-street, for Mr. John E. Hilton; at 719, Kennington Park-road, for Mr. A. F. de Laune.

SWINDON.—The Borough Surveyor having submitted estimates of the cost of erecting a new lime house at the Broome Sewage Works, the T.C. has resolved to erect a stone building at a cost of £168.

WEST HAM.—Plans passed by B.C.:—Reinstatement after fire, Baptist Church, The Grove, Stratford, for Mr. J. R. Moore Smith; drying room, Windmill-lane, Stratford, for Messrs. Innes, Sons & King; additional floor for store, Stephenson-street, Canning Town, for Dicks Asbestos Co.; shed, Abbey Mills Chemical Works, West Ham, for Messrs. Wood Bros.; extracting room and roof, Potts, Hill & Co.'s premises, Mill River Wharf, Hunts-lane, for Mr. H. Smith; drying room, Cowan Bros.' premises, Barbers-road, Stratford, for Mr. W. J. Cearns; sanitary accommodation, Freund & Co.'s premises, Tower Hamlets-road, Forest Gate, for Mr. H. C. Horswill; shop extension, 44, St. Martins-street, for Mr. G. J. Hosking; cheese factory and store, Eastern Counties Dairy Co.'s premises, Well-street, for Mr. A. E. Symes; coach house, 9, Plasket-road, Upton Park, for Mr. J. Cornish; alterations and additions at John Knight's premises, Silvertown, for Mr. S. Clifford Tee; offices and stores, Bradfield-road, Silvertown, for Mr. P. M. Fraser; shed, Estler Bros.' premises, Butchers-road, Plaistow, for Mr. J. R. Moore Smith; office and store, Empire Works, Densham-road, West Ham, for Mr. A. Bernstein; stables, Bedwell & Co.'s premises, Esk-road, Plaistow, for Mr. C. Living, jun.

WILLESDEN.—Plans passed by U.D.C.:—Alterations to factory premises, Leinster-road and Carlton Vale, by Mr. M. Ward, for the Delauney Belleville Co.; story to butter factory, Waxlow-road, by Mr. T. W. Willard, for the Moray Creamery Co.; sanitary accommodation, 9, High-road, Willesden Green, Mr. W. H. Watts, for Mr. Beverly; shed, 179, High-road, Kilburn; office, Cumberland-avenue, Park-road, for the Fellows Magneto Co.; sanitary accommodation, Royal Laundry, High-road, Willesden Green, by Mr. F. Wilkins, for the Electrical Contracts and Maintenance Co., Ltd.; addition, Edinburgh Biscuit Works, Waxlow-road, for Mr. T. W. Willard, for Messrs. McVitie & Price; addition to factory, Acton-lane, Mr. W. J. S. Lawton, for the Crypto Electrical Co., Ltd.; alterations, 370, High-road, by Mr. J. W. S. Burmester, for the Electrical Contracts and Maintenance Co.; addition, Maybury-gardens, by Messrs. E. & W. Hunt, for the British Cellulose and Chemical Manufacturing Co; factory, Oaklands-road, Cricklewood, by Mr. W. Trant Brown, for Mr. B. A. Quint; store, 37, Station-road, Willesden, for Messrs. Beeson Bros.

* See also our list of Competitions, Contracts, &c., on page 218.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	11	11	11	11	11	10½	10	8	8	8
Accrington	11½	11½	11	9½	9	10	9½	7	7	7
Altrincham	1/2	1/2	1/3	1/2	1/-	1/1	1/-	10	11	10
Ashton-under-Lyne	1/1	1/2	1/1½	1/1	1/1	1/2	1/-	9½	10	10
Barnsley	1/0½	1/1½	1/1½	1/-	1/-	1/-	1/-	9½	9½	9½
Barrow-in-Furness	1/2	1/2	1/2	1/2	1/2	1,2	1/1½	1/-	1/-	1/-
Barry	1/-	1/-	1/-	1/-	—	1/-	11	9	9	9
Bath	11½	11½	11½	11	11	11½	10½	9	9	9
Bedford	11	11	11	11	11	11	9	9	9	9½
Birkenhead	1/2	1/2	1/2	1/1	1/1	1/3	1/2	10½	10½	10½
Birmingham	1/1½§	1/1½§	1/1½§	1/1½§	1/1½§	1/1½§	1/0§	10½§	10½§	10½§
Bishop Auckland	11	11	11	11	1/2	11	10	8	8	8½
Blackburn	1/1	1/1½	1/1½	11	1/0½	1/1½	1/-	8½	9	9
Blackpool	1/-	11	1/2	9½	8½	9½	10½	6	6	6
Bolton	1/1	1/2	1/2	11½	1/0½	1/2	1/0	7½	7½	10
Bournemouth	11	11	11	11	11	11	10½	8½	8½	8½
Bradford	1/2½	1/2½	1/2	1/1½	1/1½	1/3	1/1	1/-	1/-	1/-
Bridgwater	8½	8½	8½	8½	8½	8	7½	6	6	6
Brighton	1/-	1/-	1/-	1/-	1/-	1/-	10½	9½	9½	9½
Bristol	1/2½	1/2½	1/2½	1/2½	—	1/2½	1/1½	11½	11½	11½
Burnley	1/0½	1/0½	1/0½	1/-	1/-	1/2	1/-	7	7½	7½
Burton-on-Trent	11	11	11	11	11	11	10½	8½	8½	8½
Bury	1/2	1/2	1/2	1/1	1/1	1/2	11½	10	10½	10½
Cambridge	11	10½	10½	10½	10½	11	9	7½	7½	7½
Cardiff	1/1½	1/1½	1/1½	1/1½	1/1½	1/2½	1/0½	10½	10½	10½
Chatham	10	10	10	10	10	10	8½	7	7	7
Chelmsford	8	7½	8½	9	—	7½	6½	5	5	6½
Cheltenham	9½	9½	9½	9½	—	9½	9½	6½*	6½*	6½
Chester	11½	1/-	1/-	1/-	1/-	1/-	11	7½	8½	8½
Chesterfield	1/-	1/-	11	11	10	11	10½	8-8½	8-8½	8-8½
Colchester	9	9½	9½	10	9	10	7	6½	6½	6½
Coventry	1/2	1/2	1/2	1/2	1/2	1/2	1/1	11½	11½	1/-
Crewe	9	9½	10	10½	10	9½	10	7	7	7½
Darlington	1/0	1/1	1/1	1/1	1/2	1/-	1/-	10	10	10
Derby	1/-	1/-	1/-	1/-	1/-	11½	11½	9	9	9½
Doncaster	10½	1/-	1/-	10½	10	9½	8½	9	9	9½
Dudley	9½	1/-	1/-	10	10	9½	9	7½	7½	7½
Durham	10½	10½	10½	10½	10½	9½	9	7	7	7
East Glam. and Mon. Valleys	10	10	10	10	—	—	9	7	7	7
Exeter	10	10	10	10	10	10	9	8	8	8
Folkestone	8½	9	9	9½	8½	9	8	7	7	7
Gloucester	10½	11	11	10½	10½	11	10	8½	8½	8½
Grantham	9½	10	9½	9½	10	8½	8	8	7½	8
Grays	—	1/-	1/-	—	—	1/-	10½	—	10	10
Grimsby	11½	1/-	1/-	1/-	1/-	1/-	10	10	10	10
Great Yarmouth	10	10	10	10	10	10	8½	7	7	7
Halifax	1/1½	1/1½	1/1½	1/1½	1/1½	1/2	11	10½	10½	10½
Harrogate	10½	9½	11	9	8	1/-	9½	7½	7½	7½
Hartlepools	1/2	1/2	1/2	1/2	1/2	1/2	10½	1/-	11	11
Hastings	10	10	10	10	10	10	8½	7	7	7
Hereford	10	10	10	10	10	10	9	7½	7½	7½
Huddersfield	1/2½	1/2½	1/3	1/-	1/-	1/-	11	11½	11½	11½
Hull	1/3	1/3	1/3	1/3	1/3	1/3	1/1½	1/1	1/1	1/1
Ipswich	1/-	1/-	1/-	1/0½	1/-	1/0½	10½	9½	9½	9½
Lancaster	1/-	1/-	1/-	1/-	1/-	1/-	1/-	9	9	9
Leamington Spa	10½	10½	10½	10½	10½	10½	9½	7½	7½	7½
Leeds	1/2½	1/2½	1/2	1/2	1/2	1/3	11½	11½	11½	1/-
Leicester	1/1	1/1	1/1	1/1	1/1½	1/1	11½	10½	10½	11
Lincoln	10½	1/-	10½	10½	10½	10½	10	9½	9½	9½
Liverpool	1/2	1/2	1/2	1/2	1/1½	1/3	1/0½	10½	10½	10½
Llanelly	1/1	1/1	1/1	1/1	1/1	1/3	11½	10½	10½	10½
London	1/3½	1/3½	1/3½	1/3½	—	1/3½	1/0½	11½	11½	11½
Loughborough	10	10	10½	10	10	10	9	8½	8½	9½
Luton	10½	10½	10½	11½	10½	11	9½	8	8½	9
Maidstone	10	10	10	10	10	10	9	7	7	7
Manchester	1/3	1/3	1/3	1/3	1/2	1/4	1/3	11	11½	11½
Mansfield	11	11	10½	11	11	10½	11	8	8	8
Merthyr Tydfil	11	11	11	11	11	11	10	8½	8½	8½
Middlesbrough	1/2	1/2	1/2	1/2	1/2	1/2	1/-	11	11	11
Newcastle-on-Tyne	1/2	1/2	1/2	1/2	1/2	1/1	1/1	11	11	11
Newport, Mon.	11½	11½	11½	11½	11½	1/2	10½	8½	8½	8½
Northampton	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Norwich	10½	10½	10½	10½	10½	10½	9½	8	8	8
Nottingham	1/2½	1/2½	1/2½	1/2½	1/2½	1/3	1/1½	1/0½	1/0½	1/0½
Oldham	1/1	1/-	1/2	1/2	11	1/2	1/-	10½	10½	11
Oxford	11	10½	10½	10½	10½	10½	9½	8	8	8
Plymouth	1/2*	1/2*	1/2*	1/2*	1/2*	1/2*	8½*	8½	8½	8½
Pontypridd	11	11	11	11	11	11	10	8	8	8
Portsmouth	1/-	1/-	1/-	1/-	1/-	11	10	9½	9½	9½
Preston	1/-	1/0½	11½	1/-	1/-	1/-	11½	8½	9	8½
Reading	10½	10½	10½	11	10½	10½	9	7½*	7½*	7½*
Rochdale	1/1	1/1	1/2	1/1	1/1	1/2	1/-	9½	9½	10
Rochester	10	10	10	10	10	10	8½	7	7	7
Rugby	1/-	1/-	1/-	1/0½	1/1	1/-	11	9	9	10
St. Albans	10	10	10	10	10	10	9	8	8	8½
St. Helen's	1/2	1/2	1/2	1/2	1/2	1/2	1/1	8	8	8
Scarborough	9½	9½	9	9½	9½	9½	8½	9	9	9
Sheffield	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/1½	11½	11½	11½
Shrewsbury	8½	11½	1/3	9½	—	8½	7	8½	8½	8½
Southampton	1/0½	1/0½	1/0½	1/0½	1/0½	1/0½	11½	9½	9½	9½
Southend-on-Sea	10	10	10	10	P'cework	10	9	8	8	8
Southport	11½	11	11½	11	11	1/1	1/1	10	10	10
South Shields	1/2	1/2	1/2	1/2	1/2	1/1*	1/1	11	11	11
Stockport	1/2	1/1½	1/2½	1/-	1/1½	1,2	11½	10	10	10
Stockton-on-Tees	1/2	1/2	1/2	1/2	1/2	10½	1/-	11	11	11
Stoke-on-Trent	11½	11½	11½	11½	—	10½	10½	8½	8½	8½
Stroud	9½	9½	9½	9½	9½	9½	9	7½	7½	7½
Sunderland	1/2	1/2	1/2	1/2	1/2	1/1½	1/1	11	11	11
Swansea	1/1	1/1	1/1	1/1	1/1	1/2	1/0½	10	10	10
Taunton	10	10	10	10	10	10	9	7½	7½	7½
Torquay	10	10	10	10	10	10	10	8	8	8
Wakefield	10	1/-	11½	1/-	1/-	1/1	10	9½	9½	9½
Walsall	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/-	11½	11½	11½
Warrington	11½	1/0½	1/0½	1/1	1/1	1/0½	11½	8½	9	9½
West Bromwich	11	11	10½	10½	—	10	9	8	8	8
Wigan	1/1½	1/2	1/1½	1/1½	1/0½	1/1½	11½	10	10	10½
Windsor	1/-	1/-	1/-	1/-	1/-	1/-	10½	9	9	9
Wolverhampton	1/-§	1/-§	1/-§	1/-§	1/-§	1/-§	10½§	9§	9§	9§
Worcester	9½	1/-	1/-	1/-	1/-	1/-	10	10½	10½	10½
York	1/-	1/-	1/-	1/-	1/-	10½	9½	9½	9½	9½

The Masons' rate given is for bankers; fixers usually ½d. per hour extra.

* War bonus of 2s. per week granted. † War bonus of 3s. per week granted. ‡ War bonus of 3s. 6d. per week granted.
‖ War bonus of 6s. per week granted. § 1½d. per hour extra for men engaged on munition work.

NEW GOVERNMENT CONTRACTS.

H.M. Office of Works.

Building Works.—Armfields Hotel, Metropolitan Water Board, Alterations, &c.: W. T. Maddison, Canning Town, E.; Campden Hill Maternity Centre, Erection of a Temporary Building: Higgs & Hill, Ltd., South Lambeth, S.W.; Craigend Park, Liberton Neurasthenia Hospital, Scotland, Ministry of Pensions, Alterations and Extensions: James Millar & Sons, Ltd., Edinburgh; East Greenwich, H.M. Fuel Research Station, Supply and Erection of Steelwork: Richard Moreland & Son, Ltd., London, E.C.; Netley British Red Cross Hospital, Erection of Phthisis Building: J. Douglas, Southampton; New Science Museum, South Kensington (Adaptation) Joinery: W. H. T. Kelland & Sons, Ltd., Hornsey Rise, N.; Plymouth Grain Stores, Erection of an Additional Shed: Wakeham Bros., Plymouth; Sheffield, Director of Inspection of Steel, Townhead Street, Alterations and Additions: Abbott & Bannister, Ltd., Sheffield; Wolverhampton Employment Exchange, Alterations to Premises: E. Crowder, Birmingham.

Engineering Services.—Avonmouth Grain Stores, Permanent Conveyor: Spencer & Co., Melksham; East Greenwich, H.M. Fuel Research Station, Electric Push-Button Goods Lift: Aldous & Campbell, London, S.E.; East Greenwich, H.M. Fuel Research Station, Three Overhead Cranes: Herbert Morris, Ltd., Loughborough; East Greenwich H.M. Fuel Research Station, Six Gasholders: Midland Iron Works, Donnington, nr. Newport; Erith, Controller Timber Supplies Store, Fire Mains, Hydrants, &c.: J. Mowlem & Co., Ltd., Westminster, S.W.; Hull, King George's Dock, New Canteen, Heating and Hot Water Service, &c.; W. G. Cannon & Sons, Ltd., Southwark, S.E.; Plymouth Grain Stores, Four extra Grabs: Priestman Bros., Ltd., Hull; St. James's Park, Admiralty Controller and Ministry of Munitions, High-explosive Building, Extension of Hot Water Supply Apparatus: Palowkar & Sons, London, E.C.

Furniture, &c.—Boxes, Filling: North of England School Furnishing Co., Ltd., Darlington. Cabinets, Card Index: Chapman & Sons, Ltd., Shoreditch. Cabinets (Cloth Covered): North of England School Furnishing Co., Ltd., Darlington; Henry Stone & Son, Ltd., Banbury, Oxon. Chairs: Owen Haines, High Wycombe, Bucks; J. Webb & Sons, High Wycombe, Bucks; Chairs, Windsor: W. Barrett, High Wycombe, Bucks.; J. Elliott, High Wycombe, Bucks; J. Evans, High Wycombe, Bucks; Goodearl Bros., High Wycombe, Bucks; H. Goodearl & Sons, High Wycombe, Bucks; R. Smith, Lane End, Bucks. Chairs, Telephone Operators: W. H. Healey, Ltd., High Wycombe, Bucks. Drawers, Chests of: Davies & Co., Padiham; R. T. Colley & Son, Birmingham. Forms, 5 ft. long: Geo. Blay, New Malden, Surrey. Mirrors, Hanging and Standing: T. Tapling & Co., Ltd., London, E.C. Pigeonholes, Cases of: J. Wheeldon & Son, Ltd., Salford, Manchester. Presses, 3 ft. Store: Geo. Moss & Sons, Leigh, Lancs. Sideboards: E. Fisher, Ltd., Preston. Tables: Smith Bros., Ltd., Burnley; Siemens Bros. & Co., Ltd., Woolwich, S.E.; T. Bradford & Co., Ltd., Salford, Manchester; North of England School Furnishing Co., Ltd., Darlington; Herbert Shepherdson, Southport; H. H. Elliott, London, E.C.; Holland & Sons, London, W.; J. Brett & Sons, Ltd., Norwich; Bennet Furnishing Co., Ltd., Peckham, S.E.; Wake & Dean, Yatton, nr. Bristol; Barnstaple Cabinet Co., Barnstaple, Devon; Sharp Bros. & Knight, Burton-on-Trent; Henry Stone & Son, Banbury, Oxon; Fielding & Bottomley, Halifax; E. A. Vincent, Ventnor, I. of W.; E. Tomlinson & Son, Leyland, nr. Preston; Archer & Sons, Ltd., Northampton; E. Bean, Ltd., London, E.C.; Richard Stone & Sons, Ltd., Wellington, Salop; North of England School Furnishing Co., Ltd., Darlington; Heggie & Aitchison, Edinburgh; Colin Macandrew, Edinburgh; A. Sims, Ventnor. Washhand Stands: D. Meredrsw, Letchworth.

(*Continued on page* 218.)

PRICES CURRENT OF MATERIALS.

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue several prices have been revised—Ed.]

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1,000 Alongside, in River Thames.	£ s. d.
Best Stocks	2 10 0
Picked Stocks for Facings	3 5 0

Per 1000, Delivered at Railway Depot, London.

	£ s. d.		£ s. d.
Flettons	2 3 0	Best Blue Pressed Staffordshire	6 10 0
Best Fareham Red	4 0 0	Do. Bullnose	6 15 0
Best Red Pressed Ruabon Facing	6 0 0	Best Stourbridge Fire bricks	9 5 0

GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers	14 17 6	D'ble Str'tch'rs	20 7 6
		D'ble Headers	17 7 6
		One Side and two Ends	21 7 6
Headers	14 7 6	Two Sides and one End	22 17 6
Quoins, Bullnose and 4½in. Splays and Flats	18 7 6	Squints	19 17 6

Glazed bricks priced at so much each, 25 per cent. advance on list.

Second Quality, £1 per 1,000 less than best.

	s. d.		
Thames Ballast	10 0	per yard,	delivered
Pit Sand	12 6		
Thames Sand	13 6	,, ,,	2 miles
Best Washed Sand	14 0	,, ,,	radius
¾ in. Shingle for Ferro-Concrete	12 0	,, ,,	Paddington.

Per ton, delivered.

	£ s. d.	£ s. d.
Best Portland Cement	2 15 0 ..	2 18 0

Do. £2 11s. 0d. alongside in 80-ton lots.
Ferrocrete 2s. 6d. per ton extra on above.
Best Ground Blue Lias Lime 1 13 6 at rly. depot.
NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 3d. each and credited at 2s. each if returned in good condition within three months.
Grey Stone Lime ..... 47s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 37s. 6d. per ton at rly. dpt.

STONE.

BATH STONE—delivered in railway trucks at	s. d.
Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	1 7
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	1 8½
Do. do. delivered on road waggons at Nine Elms Depot	1 9½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Mileage Station G.W.R., per ft. cube	2 10½
Do. do. delivered on road waggons at above stations, per ft. cube	2 11½

White basebed, 2d. per ft. cube extra.
NOTE.—½d. ft. cube extra for every foot over 20 ft. *average.*

RANDOM BLOCKS—Per Ft. Cube, delivered at Rly. Dpot.

	s. d.		s. d.
Ancaster in blocks	2 0	Closeburn Red	
Beer in blocks	1 7½	Freestone	2 2
Grinshill in blocks	2 4	Red & White Mansfield random block	2 9
Darley Dale in blocks	2 5	Yellow Magnesian Limestone do. do	3 3

YORK STONE—*Robin Hood Quality.*

Delivered at any Goods Station London.	s. d.
Scappled random blocks ..... Per Ft. Cube	3 11
6 in. sawn two sides landings to sizes (under 30 ft. super.) ..... Per Ft. Super	3 0
6 in. rubbed two sides, ditto ..... ,,	3 4
3 in. sawn two sides slabs (random sizes) ,,	1 3½
2 in. to 2½ in. sawn one side slabs (random sizes) ..... ,,	0 10
1½ in. to 2 in. ditto, ditto ..... ,,	0 8½

HARD YORK—

Delivered at any Goods Station London.	
Scappled random blocks ..... Per Ft. Cube	3 6
6 in. sawn two sides landing to sizes (under 40ft. super.) ..... Per Ft. Super	2 8
6 in. rubbed two sides ditto ..... ,,	2 4
3 in. sawn two sides slabs (random sizes) ,,	1 3
2 in. self-faced random flags ..... ,,	0 5½

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	3 15 0
Ditto hand-made ditto	3 17 6
Ornamental ditto	4 0 0
Hip and valley tiles (per dozen)	0 9 0

SLATES.

		Per 1,000 of 1,200 f.o.r. London. £ s. d.
Best Blue Bangor Slates,	20 by 10	16 10 0
,, ,,	16 by 8	8 10 0
First quality ,,	20 by 10	16 0 0
,, ,,	16 by 8	8 2 6
Best Blue Portmadoc	20 by 10	16 10 0
,, ,,	16 by 8	8 10 0
First quality ,,	20 by 10	15 5 0
,, ,,	16 by 8	7 12 6

WOOD.

BEST BUILDING REDWOOD. Imported sizes.

Softwood stocks controlled by the Director of Materials, consequently prices must be withdrawn

Deals: 4 in. by 12 in., 4 in. by 11 in., 3 in. by 11 in., 4 in. by 9 in., and 2 in. by 11 in.	
3 in. by 9 in., 2½ in. by 9 in., and 2 in. by 9 in.	

WOOD (*Continued*).

BEST BUILDING REDWOOD.

Softwood stocks controlled by the Director of Materials, consequently prices must be withdrawn.

Battens: 2 in., 2½ in., and 3 in. by 8 in.	
2 in., 2½ in., and 3 in. by 7 in.	
2 in., 2½ in., and 3 in. by 6 in.	
Scantlings: 2 in. by 3 in., 2 in. by 3½ in., 2 in. by 4 in., 2 in. by 4½ in.	
3 in. by 4 in., and 3 in. by 4½ in.	
Boards: 1 in., 1¼ in., and 1½ in. by 6 in. and 7 in.	
¾ in.	
Seconds	
Sawn pitch pine logs (about 35 cu. ft. average	
Do. 6 in. to 10 in.	
Best Pitch Pine Deals	
Under 2 in. thick	

JOINERS' WOOD

White Sea First Quality Red: 4 in. by 11 in.	
3 in. by 11 in., and 2 in. by 11 in.	
4 in. by 9 in.	
3 in. by 9 in., and 2½ in. by 9 in.	
3 in. by 11 in. boards	
7 in. and 8 in. battens	
7 in. and 8 in. boards	
Archangel White Deals—	
Best 3 in. by 9 in. and 10 in. and 11 in.	
Seconds, do.	
U.S. Battens	
Prepared Floorings and Matchings. Seconds Swedish Red and equal—	
1¼ in. by 6½ in. planed and shot	
1¼ in. by 6½ in. planed and matched	
1 in. by 6½ in. planed and shot	
1 in. by 6½ in. planed and matched	
¾ in. by 6½ in. planed, matched, and beaded, or V jointed	
1 in. by 6½ in. do.	
Columbian or Oregon Pine, best quality	
Yellow Pine—First regular sizes	
Oddments	
Seconds, regular sizes	
Oddments	
Kauri Pine—Planks per ft. cube	

Dry Wainscot Oak, per ft. super, as inch	0	2	0	..	0	2 6
¼ in. do. do.	0	1	6	..	0	2 0
Dry Mahogany—Honduras, Tabasco, per ft. super, as inch	0	2	6	..	0	3 0
Cuba Mahogany	0	2	6	..	0	3 6
Dry Walnut, American, per ft. super, as inch	0	2	0	..	0	3 0
French, "Italian," Walnut	0	3	0	..	0	5 0
Teak, per load (Rangoon or Moulmein)	60	0	0		85	0 0
Do. do. (Java)						
American Whitewood planks, per ft. cube	1	4	0	..	1	10 0
Glue, per cwt.	6	0	0	..	6	15 0

METALS.

JOISTS, GIRDERS, &c.

Prices controlled by the Ministry of Munitions.

Rolled Steel Joists, ordinary sections, basis price	
Plain Compound Girders, ordinary sections	
Plain Compound Stanchions	
Angles, Tees, and Channels, ordinary sections	
Flitch Plates	
Cast Iron Columns and Stanchions, plain ordinary patterns	

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £4 net value delivered direct from works. 5 per cent. less carriage forward if sent from London stocks.)

	Sizes up to and including 2 in. Tubes.	Fittings.	Sizes 2½ in. to 6 in. Tubes.	Fittings.
Gas	36½	40	41½	42½
Water	31½	37½	36½	40
Steam	26½	35	31½	37½
Galvanised Gas	13½	32½	17½	35
,, Water	5	30	8½	32½
,, Steam	1¼ *on*	27	2½	30

L.C.C. SOIL PIPES— London Prices ex works.

	Pipes coated. s. d.	Bends, stock angles. s. d.	Branches, stock angles s. d.
2 in. per yd. in 6 fts.	3 2	2 4½	2 10½
2½ in. ,,	3 8	2 7½	3 7
3 in. ,,	4 6	2 10½	4 3½
3½ in. ,,	5 0	3 7	5 0
4 in. ,,	5 6	4 1	5 9½

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles s. d.
2 in. per yd. in 6fts. plain	2 3½	1 4	1 9
2½ in. ,, ,,	2 5	1 7	2 2
3 in. ,, ,,	2 10½	1 11	2 10
3½ in. ,, ,,	3 5½	2 3	3 3
4 in. ,, ,,	3 9½	2 9	4 0

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices. 4 in., 6s. 3d. .. 5 in., 7s. 9d. .. 6 in., 9s. 2d.

Per ton in London.

IRON—	£ s. d.		£ s. d.
Common Bars	16 10 0	to	17 0 0
Staffordshire Crown Bars good merchant quality	16 10 0	..	17 10 0
Staffordshire "Marked Bars"	17 10 0	..	18 0 0
Mild Steel Bars	19 0 0	..	19 10 0

METALS (*Continued*).

Per ton in London.

	£ s. d.		£ s. d.
Steel Bars, Ferro-Concrete quality, £19 basis price.			
Hoop Iron, basis price	20 10 0	..	21 0 0
,, Galvanised	33 0 0	..	—
(* And upwards, according to size and gauge.)			
Sheet Iron Black—			
Ordinary sizes to 20 g.	22 10 0	..	23 0 0
,, ,, 24 g.	23 10 0	..	24 0 0
,, ,, 26 g.	24 10 0	..	25 0 0
Sheet Iron, Galvanised flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	34 0 0	..	—
Ordinary sizes to 22 g. and 24 g.	34 0 0	..	34 10 0
Ordinary sizes to 26 g.	36 0 0	..	36 10 0
Sheet Iron, Galvanised, flat, best quality—			
Ordinary sizes to 20 g.	35 10 0	..	—
,, ,, 22 g. and 24 g.	36 0 0	..	—
Ordinary sizes to 26 g.	39 0 0	..	—
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.	33 0 0	..	—
Ordinary sizes, 22 g. and 24 g.	33 10 0	..	—
Ordinary sizes, 26 g.	32 10 0	..	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	24 10 0	..	—
Best Soft Steel Sheets, 20 g. and 24 g.	24 15 0	..	—
Best Soft Steel Sheets, 26 g.	26 10 0	..	—
Cut Nails, 3 in. to 6 in.	29 0 0	..	30 0 0

(Under 3 in., usual trade extras.)

LEAD, &c.

Delivered in London.

	£ s. d.		
LEAD—Sheet, English, 4 lb. and up	38 10 0	..	—
Pipe in coils	39 0 0	..	—
Soil Pipe	42 0 0	..	—
Compo pipe	42 0 0	..	—

NOTE—Country delivery, 20s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra. Orders for over 1 cwt. Sheet Lead or Pipe, or 28 lbs. Solder should be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N.2 (E)], Hotel Victoria, S.W. Smaller quantities than the above can be obtained by making a written declaration to the Manufacturer or Merchant that the metal is wanted for urgent renewals or repairs, and giving the name of the job for which it is required.

COPPER—					
Strong Sheet ....per lb.	0	2	2	..	—
Thin ,, ... ,,	0	2	3	..	—
Copper nails .... ,,	0	2	2	..	—
Copper wire .... ,,	0	2	3	..	—
TIN—English Ingots ,,	0	3	3	..	—
SOLDER—Plumbers' ,,	0	1	5	..	—
Tinmen's ,,	0	1	10	..	—
Blowpipe ,,	0	2	0	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft		Per Ft.
15 oz. fourths	7d	32 oz. fourths	9d.
,, thirds	7½d.	,, thirds	10d.
21 ,, fourths	7½d	Fluted, Obscured and	
,, thirds	8d.	Enamelled Sheet,	
26 ,, fourths	8d.	15 oz.	7½d.
,, thirds	9d.	21 ,,	8½d.

Extra price according to size and substance for squares cut from stock, and only small quantities can be supplied without an A Certificate.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	4½d.
3/16 Rough rolled and rough cast plate	5½d.
¼ Rough rolled and rough cast plate	5½d
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
Ditto, tinted	7½d.
Rolled Sheet	5½d.
White Rolled Cathedral	5½d.
Tinted do.	6d.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil in pipes ..... per gallon		0 5 6
,, ,, ,, in barrels .... ,,		0 5 7
,, ,, ,, in drums .... ,,		0 5 10
Boiled ,, ,, in barrels .... ,,		0 5 10
,, ,, ,, in drums .... ,,		0 6 1

Orders for these oils must be accompanied by a certificate from the Ministry of Food (Oil and Fat Department), St. Stephen's House, Westminster, S.W.1.

Turpentine in barrels ..... ,,	0	10 6
,, in drums ..... ,,	0	10 9
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)	53	10 0
GENUINE WHITE LEAD PAINT—		
"Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins) not less than 5 cwt. lots .. per ton delivered	71	10 0
Red Lead, Dry (packages extra) .. per ton	42	0 0

Orders for White and Red Lead and any Paint containing Lead must be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N. 2 (E.)], Hotel Victoria, S.W.

Best Linseed Oil Putty ..... per cwt.	0	16 0
Filocol ..... per cwt.	0	13 6

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak	0 12 0
Pale Copal Oak	0 14 0
Superfine Pale Elastic Oak	0 16 0
Fine Extra Hard Church Oak	0 14 0
Superfine Hard-drying Oak, for seats of Churches	0 16 0
Fine Elastic Carriage	0 16 0
Superfine Pale Elastic Carriage	0 18 0
Fine Pale Maple	0 14 0
Finest Pale Durable Copal	1 0 6
Extra Pale French Oil	1 4 0
Eggshell Flatting	1 0 0
White Pale Enamel	1 6 0
Extra Pale Paper	0 14 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	1 10 0
French and Brush Polish	0 16 0

NEW GOVERNMENT CONTRACTS.

(*Continued from page* 216.)

Wardrobes: W. Storrs Sons & Co., Ltd., Stalybridge; F. Bottomore & Co., Sherwood, Notts.

War Office.

Ranges and Stoves.—J. Barker & Co., Ltd., Birmingham; S. Batchelor & Son, London, S.E.; Bradley & Co., Ltd., Bilston; Callender Iron Co., Ltd., Falkirk; Camelon Iron Co., Ltd., Falkirk; Carron Co., Carron, N.B.; Davies & Co., Ltd., Wolverhampton; Dobie, Forbes & Co., Larbert, N.B.; Falkirk Iron Co., Ltd., Falkirk; Forth and Clyde and Sunnyside Iron Cos., Ltd., Falkirk; Gillespies, Ltd., Bonnybridge, N.B.; Grangemouth Iron Co., Falkirk; Jones & Campbell, Ltd., Larbert, N.B.; Lane & Girvan, Bonnybridge, N.B.; McDowall, Stevens, & Co., Ltd., Falkirk; R. & A. Main, Ltd., Edmonton and Falkirk; W. H. Micklethwait & Co., Ltd., Rotherham; O'Brien Thomas & Co., Rotherham; Park Foundry Co., Ltd., Belper; C. Portway & Son, Halstead, Essex; Scottish Central Iron Co., Ltd., Falkirk; Smith & Sons, Ltd., Smethwick; Smith & Wellstood, Ltd., Bonnybridge, N.B.; Stirlingshire Iron and Stove Co., Ltd., Bonnybridge, N.B.; Summerford Iron Co., Ltd., Falkirk; Watson, Gow & Co., Ltd., Falkirk; Wilson & Mathersons, Ltd., Leeds; G. Wright, Ltd., Rotherham.

Ruberoid.—Ruberoid Co., Ltd., Brimsdown.

Screws (Iron).—Guest, Keen & Nettlefolds, Ltd., Smethwick.

Sheets (Metal, Plain and Corrugated).—Bowesfield Steel Co., Ltd., Stockton-on-Tees; F. Braby & Co., Ltd., Glasgow; Eston Sheet and Galvanising Co., Ltd., Middlesbrough; J. Lysaght, Ltd., Bristol; Pontnewynydd Sheet and Galvanizing Co., Ltd., Pontypool; J. Summers & Sons, Ltd., Chester.

Shelters (Steel).—Braithwaite & Co., West Bromwich.

GLASS

of every Description and Variety.

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*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

BUILDING AND PAINTING.

✱APRIL 17.—**London.**—The Metropolitan Asylums Board invite separate tenders for painting and repairs at the Brook Ambulance Station, Shooters' Hill, S.E. The specification and form of tender may be inspected at the Office of the Board, Embankment, E.C., 4, on and after 10 a.m. on 3rd prox.

NO DATE.—**Kildorrery, co. Cork.**—NEW PREMISES.—For erection of premises at Kildorrery, co. Cork, for the West Surrey Central Dairy Co., Ltd. Plans, &c., by Messrs. Coughlan & O'Mahony, Civil Engineers and Architects, Mitchelstown.

FURNITURE, MATERIALS, etc.

MAY 3.—**Brighton.**—CEMENT.—For the supply of Portland cement for the year ending 30th June, 1919. Specification, &c., from the Borough Surveyor, Town Hall, Brighton.

ROAD, SANITARY, AND WATER WORKS.

APRIL 6.—**Rotherham.**—ROAD MATERIALS.—Supply to the Corporation of road materials for the year ending March 31, 1919. Specifications, &c., of Mr. Thos. Salvin, Acting and Deputy Borough Engineer, Town Hall, Rotherham.

APRIL 9.—**Beddington and Wallington.**—TAR SPRAYING.—The U.D.C. invite tenders for the tar-spraying only of about 130,000 sq. yds. of the roads within their district. Specification, &c., from Mr. E. Witton Booth, A.M.Inst.C.E., P.A.S.I., Acting Engineer and Surveyor to the Council.

APRIL 9.—**Manchester.**—GRANITE SETTS.—Supply to the Manchester Corporation Tramways Committee of granite setts. Specifications, &c., of Mr. J. M. McElroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester.

APRIL 13.—**Tetbury.**—ROAD MATERIALS.—Supply to the Tetbury (Glos.) U.D.C. of road materials during the six months ending September 30, 1918. Particulars from Mr. Thos. V. H. Davison, Engineer and Surveyor, Tetbury, Glos.

APRIL 13.—**London.**—ROAD MATERIALS, &C.—Supply to the Tottenham D.C. of road materials, &c. Forms from Mr. Reginald C. Graves, Clerk and Solicitor of the Council, Town Hall, Tottenham, N. 15.

APRIL 15.—**Dunstable.**—TAR.—Supply to the Corporation of 4,000 to 5,000 gallons of dehydrated or prepared tar during the coming summer. Mr. Wm. F. Wilkins, Borough Surveyor, Town Hall, Dunstable.

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TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 12 *noon on Wednesday.*

* Denotes *accepted.* † Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*

HESTON AND ISLEWORTH.—For supply of stoneware pipes by one year, to the U.D.C.:—

	6 in. pipes per ft.	6 in. bends each.	6 in. junes. each.
*Morgan & Son	10d.	2/5½	3/3½
Thos. Wragg & Sons, Ltd.	10d.	2/5½	3/3½
John H. Turney & Lisney, Ltd.	Incomplete		
G. Jennings	10½d.	2/6½	3/4½
W. Funge	10d.	2/5½	3/3½
Doulton & Co., Ltd.	10d.	2/5½	3/3½
J. Knowles & Co. (London) Ltd.	10d.	2/5½	3/3½

HESTON AND ISLEWORTH.—The following tenders have been accepted by the U.D.C.:—

*Eastwood & Co.—Lime and cement	£173 0 0
*J. Horsford & Co.—Flints	200 0 0
*F. Bird & Co.—Tools, &c.	98 2 6
*W. & F. Archer—Brooms, &c.	138 18 0
*W. Winterborne—Castings	115 15 0
*John Mowlem & Co.—Guernsey granite	£5,591 13 4

*Enderby and Stoney Stanton Granite Co.—Enderby Granite at 17s. 11d. per ton for 2 and 1½ in., and 14s. 5d. per ton for ½ in.

LEEDS.—For supply of stores to the Water Department of the Corporation:—

*John Bowling & Co.—Iron castings.
*E. Verity.—Ironmongery.
*J. Blakebrough & Sons.—Stopcocks.

LONDON.—The Southwark Borough Council has renewed the contract with Val de Travers Asphalte Paving Co. for re-asphalting streets for a further twelve months.

LONDON.—For supply of paving materials to the Stepney Borough Council:—

*W. Griffiths & Co.—For six months.

NEWRY.—For executing repairs to the Newry Mineral Water Co.'s premises, Newry:—

*Murtagh Lavery £315

Asphalte.—The Seyssel and Metallic Lava Asphalte Co. (Mr. G. F. Glenn), Office, Moorgate Station Chambers, Moorfields, E.C. 2—The best and cheapest materials for dampcourses, railway arches, warehouse floors, flat roofs, stables, cowsheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to Forth Bridge Co.

OGILVIE & CO., Telephone: DALSTON 1503. Many years connected with the late firm of W. H. LASCELLES & Co., of Bunhill Row.

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TYE & ANDREWS' NEW PATENT SINK TRAP is universally admitted to be THE ONLY PERFECT TRAP FOR SINKS IN DOMESTIC DWELLINGS, as fixed at the principal Institutions. Among others, Wellington Barracks, Royal College of Surgeons, etc. Prospectus upon application to the Patentees.

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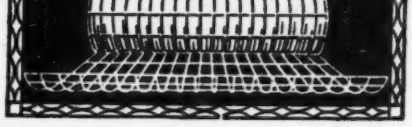
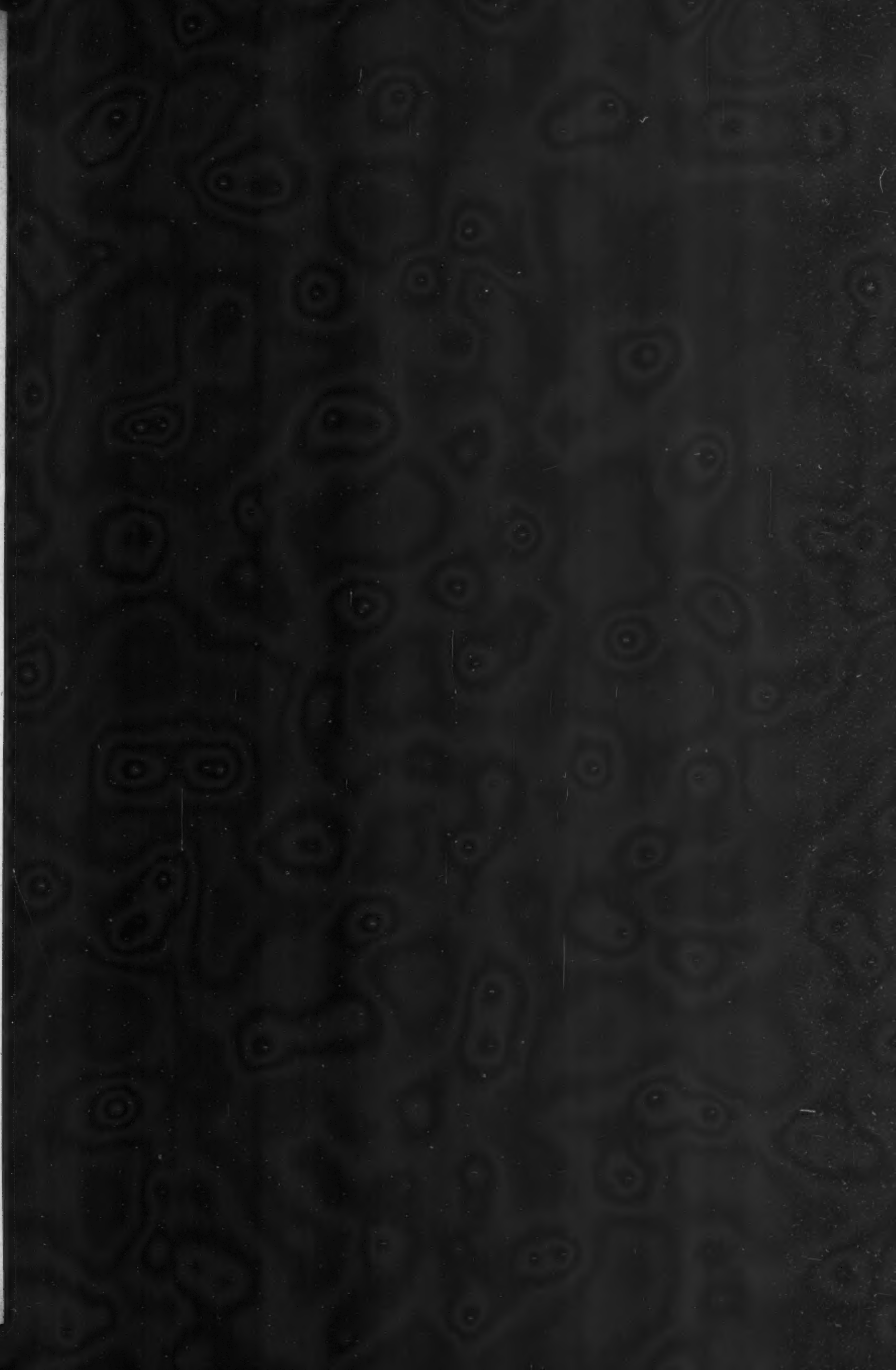
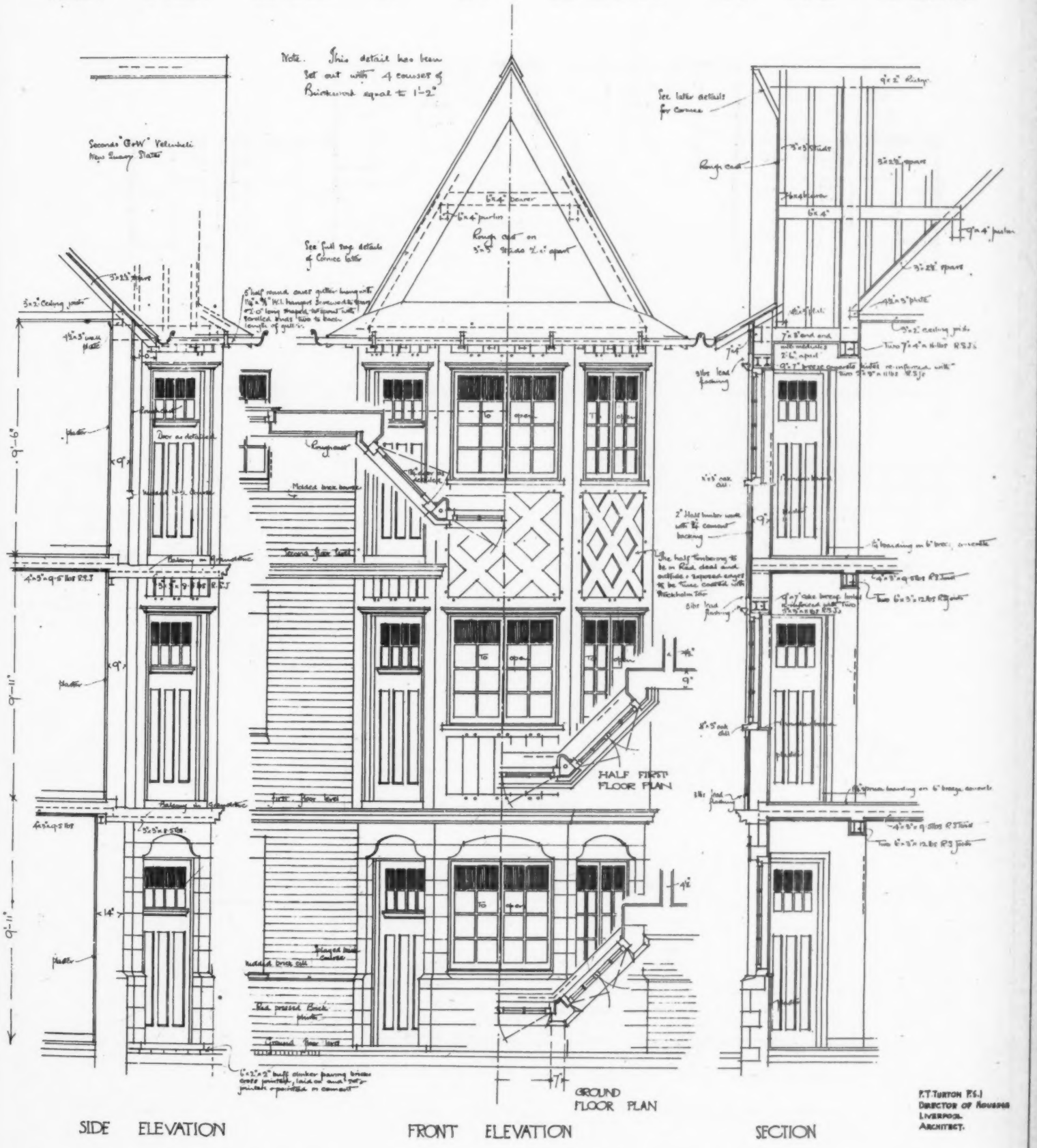


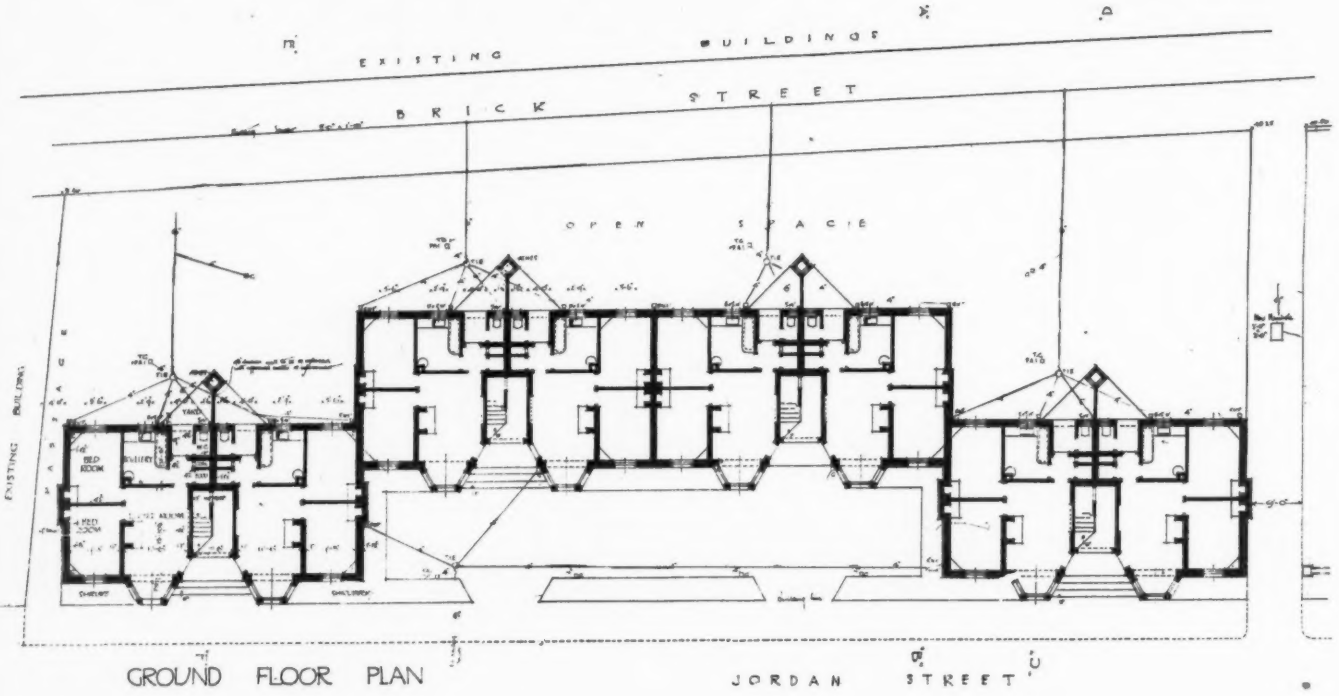


HOLLY ST AREA

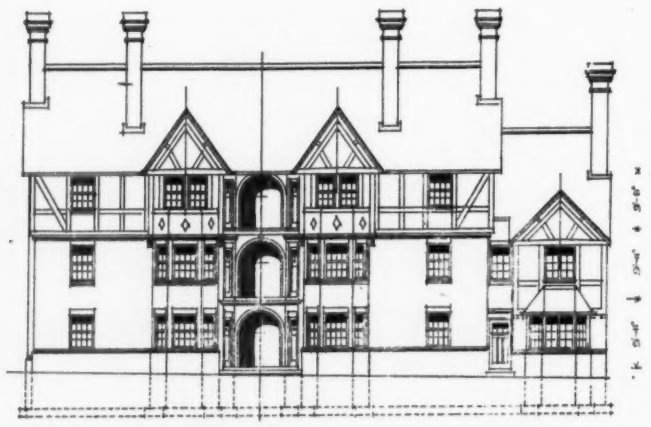
HALF INCH DETAIL OF BAY WINDOWS IN HALF-TIMBER


Note. This detail has been set out with 4 courses of Brickwork equal to 1'-2"
Seconds "G&W" Vellumbeli Mon Quarry Slates
See full rag details of Cornice below
See later details for Cornice
Rough cast
Roughcast
Rough cast on 3"x3" spars at 2'-0" apart
6"x4" Corner
6"x4" purlin
6"x4"
3"x2" spars
3"x2" Ceiling joists
9"x3" plate
Two 7"x4"-in 16 lbs RSJ's
Door as detailed
Rough cast
Projection
Moulded brick course
Plinth
Moulded brick sill
Flat pressed Brick plinth
Tile hung
Tiles as above
Lead flashing
2" Hard timber work with ½" cement backing
Rendering on 6" brick concrete
Two 6"x3"-in 12 lbs RSJ joists
Balcony as detailed
Ground floor level
First floor level
Half round cast gutter hung with 1½"x⅜" W.I. hangers 3 on each 9 feet 2'-0" long stepped to spout with vertical joints two to each length of gutter.
HALF FIRST FLOOR PLAN
GROUND FLOOR PLAN
SIDE ELEVATION
FRONT ELEVATION
SECTION
F.T. TURTON F.S.I.
DIRECTOR OF HOUSING
LIVERPOOL.
ARCHITECT.

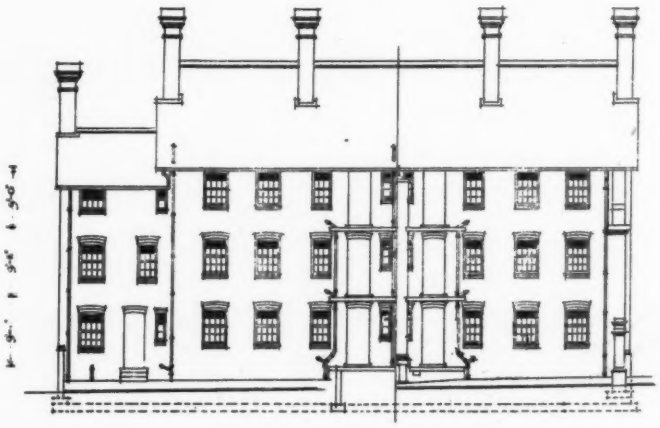
MUNICIPAL HOUSING, LIVERPOOL.—MR. F. T. TURTON, F.S.I., ARCHITECT, DIRECTOR OF HOUSING.



GROUND FLOOR PLAN



FRONT ELEVATION (TO PRIVATE ROADWAY)



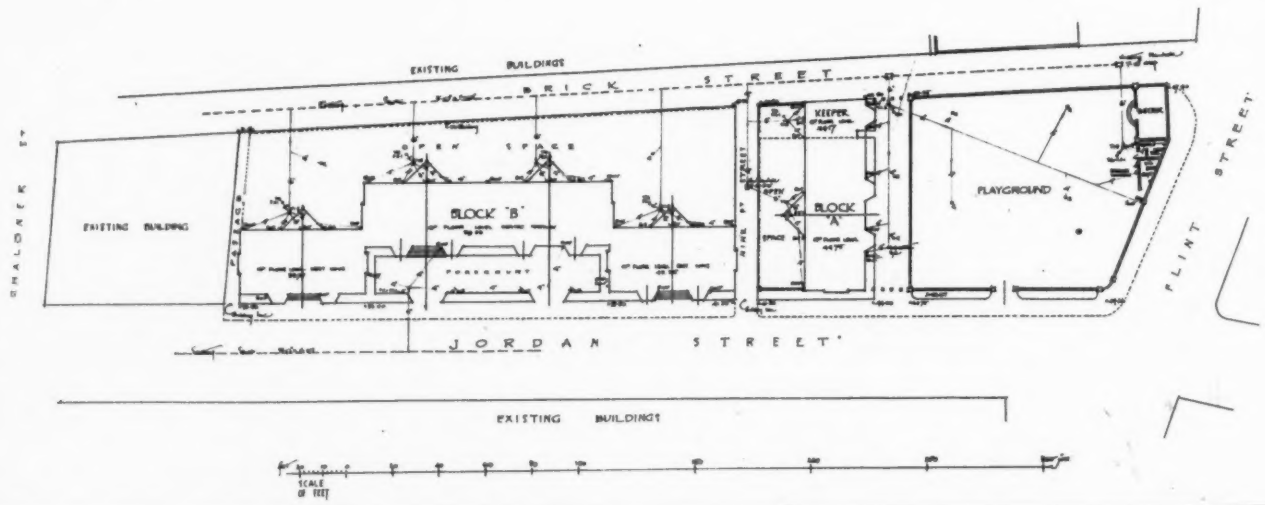
BACK ELEVATION

ACCOMMODATION

BLOCK "A"	65	FOUR ROOMED	TENEMENTS	OR	24 ROOMS
" "B"	24	THREE "	"	"	72 "
TOTAL	95	TENEMENTS			96 "
			KEEPERS HOUSE		4 "
			GRAND TOTAL		100 "
			ACCOMMODATING		200 PERSONS

ABBREVIATIONS

T.&T.	-	
R.	-	
R.&I.	-	
C.V.	-	
B.&W.	-	
C.	-	
T.C.	-	
RNT	-	



MUNICIPAL HOUSING, LIVERPOOL.—MR. F. T. TURTON, F.S.I., ARCHITECT, DIRECTOR OF HOUSING.

COMPETITION FOR A MEMORIAL PLAQUE TO BE GIVEN TO THE NEXT-OF-KIN OF MEMBERS OF THE FORCES WHO HAVE FALLEN IN THE WAR.

Design (placed first) by Mr. E. Carter Preston.

St. Anne Street Area Dwellings: Christian Street Front.

St. Anne Street Area Dwellings, looking up Holly Street.

CITY OF LIVERPOOL MUNICIPAL HOUSING.

Mr. F. T. Turton, F.S.I., Architect, Director of Housing.

BURLINGTON STREET DWELLINGS.

COMBERMERE STREET DWELLINGS.

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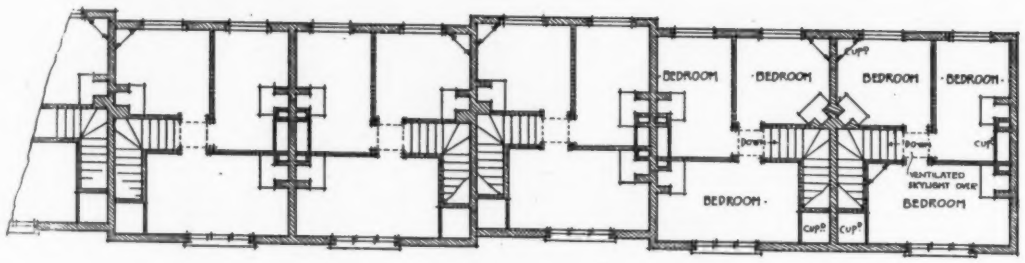
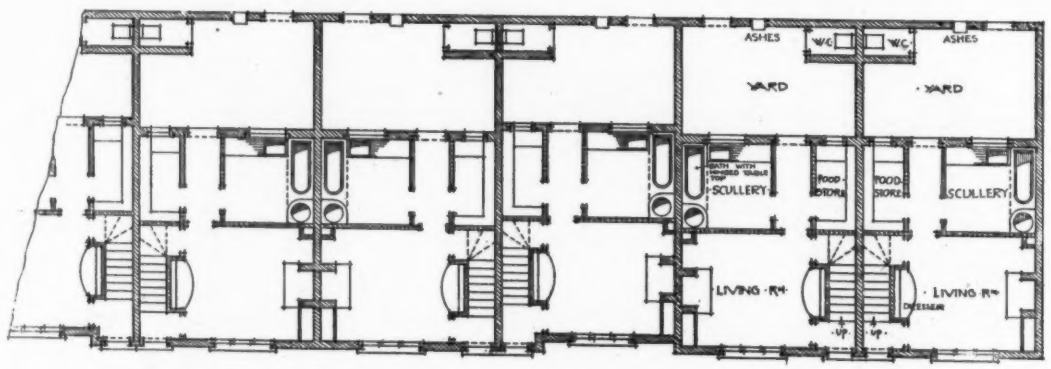
CITY OF LIVERPOOL
DWELLINGS · BEVINGTON · STREET · AREA

PLAN · OF · SELF · CONTAINED · COTTAGES ·



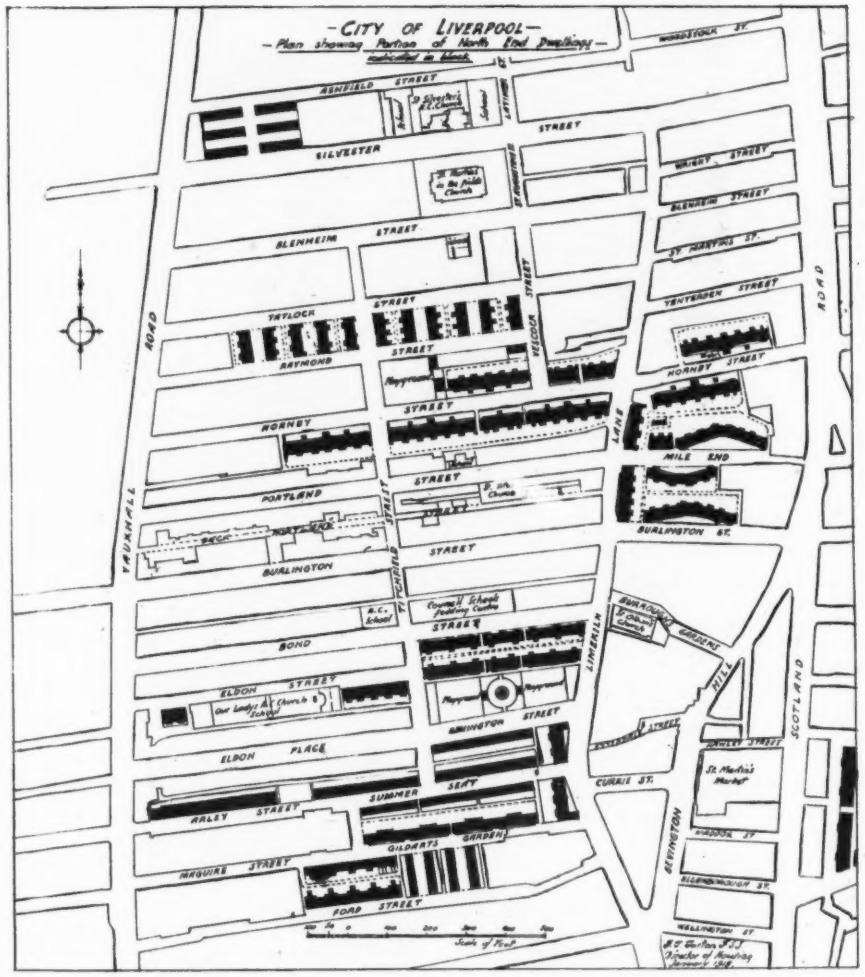
· PART · OF · FIRST · FLOOR · PLAN ·



· PART · OF · GROUND · FLOOR · PLAN ·

SCALE · OF · FEET ·

10 5 0 10 20 30 40 50



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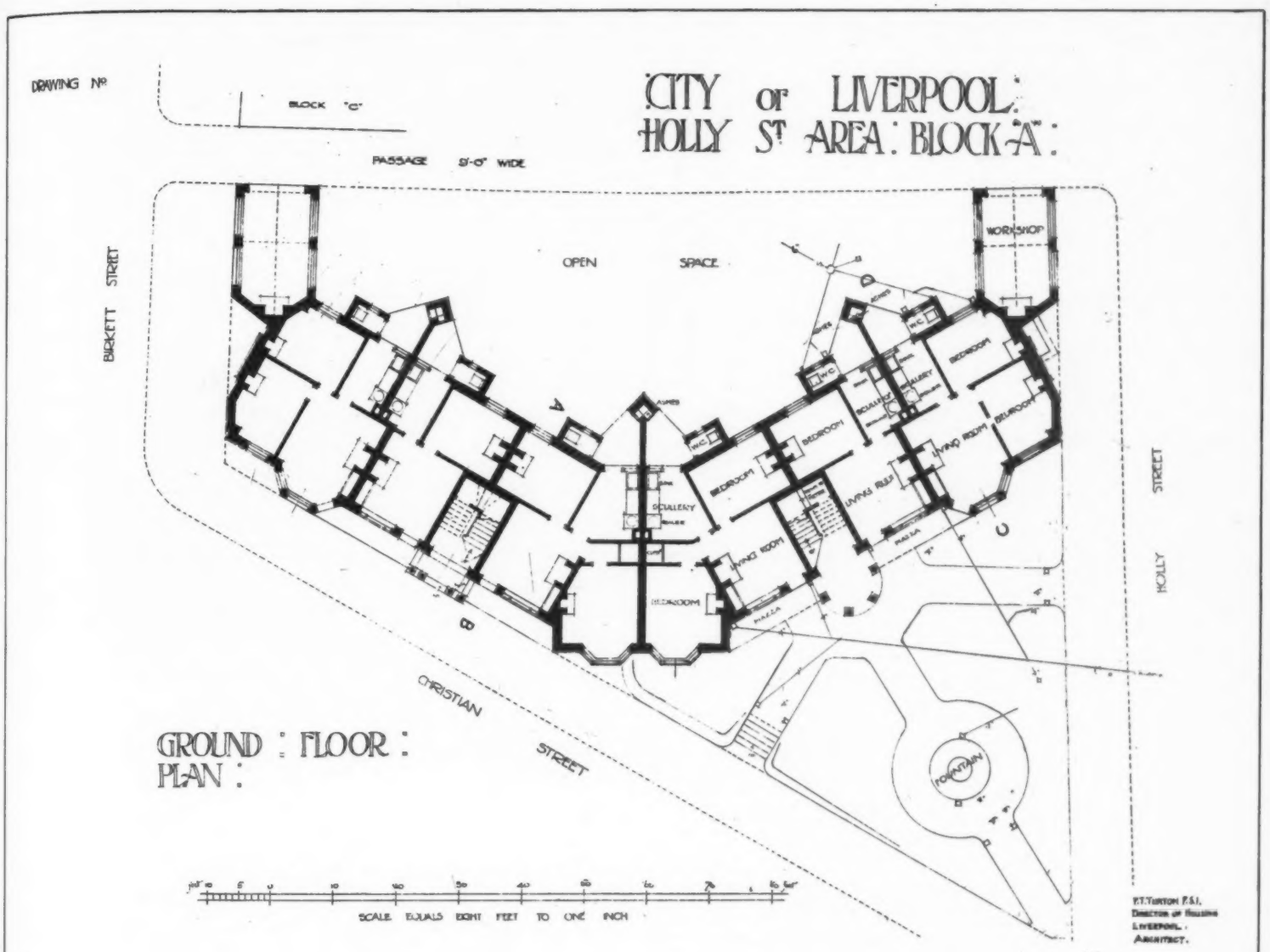

FRONT ELEVATION.
(DEVELOPED)

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DIRECTOR OF HOUSING
LIVERPOOL.
ARCHITECT.

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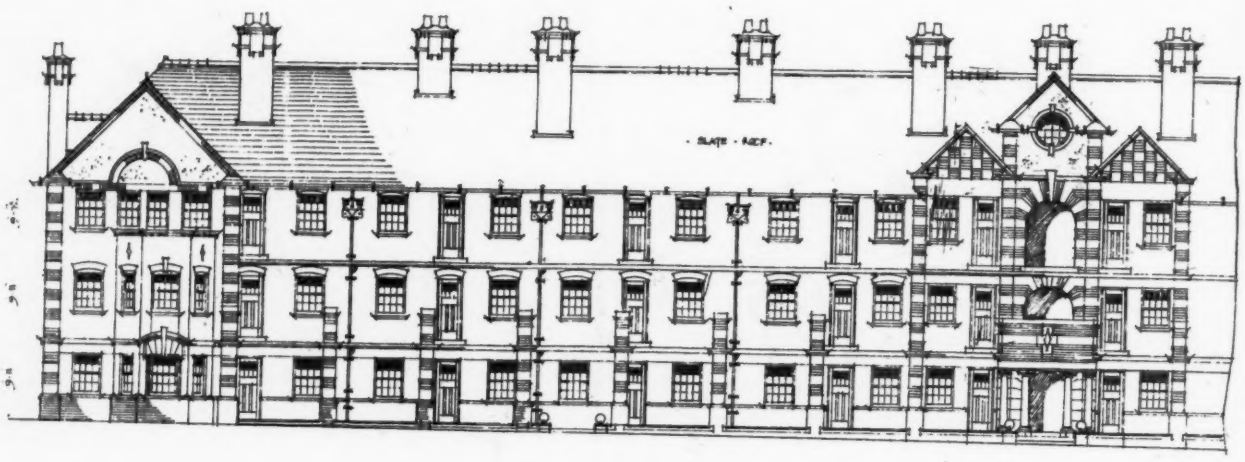
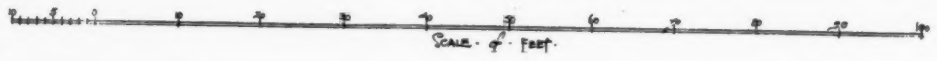
LABOURERS : DWELLINGS :
BURLINGTON : ST : AREA : · BLOCK · "A" ·

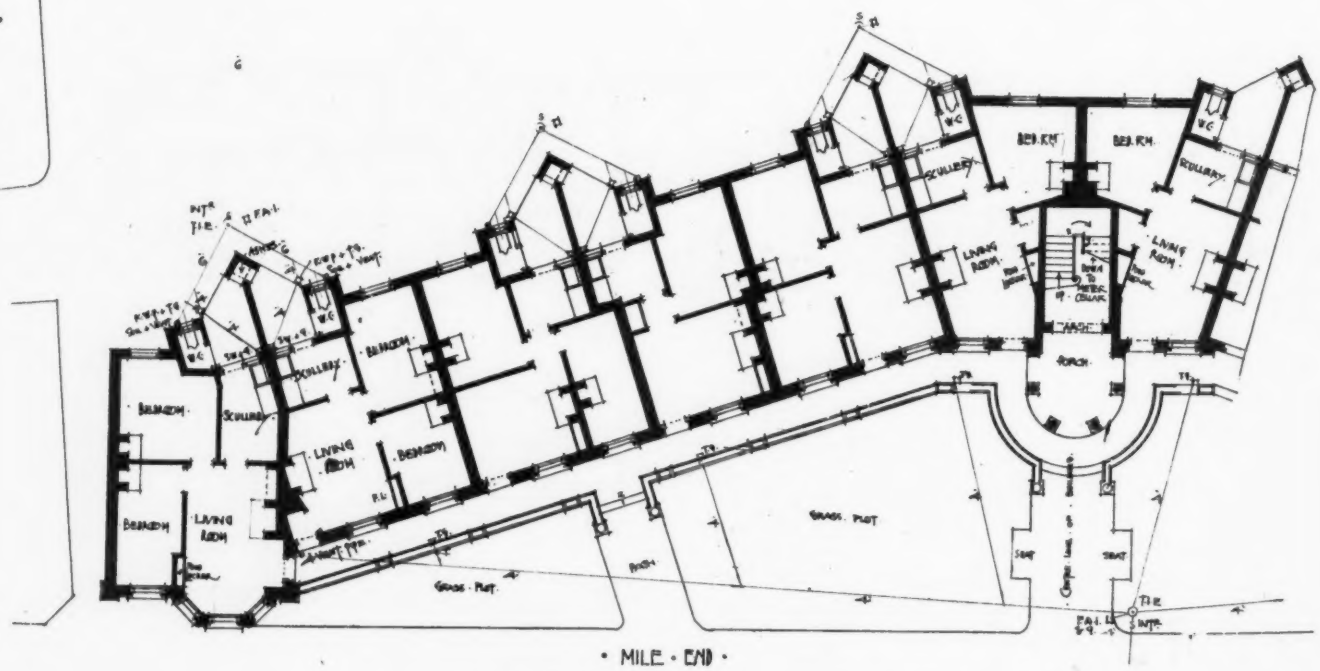


· FRONT · ELEVATION · TO · BLOCK · A ·



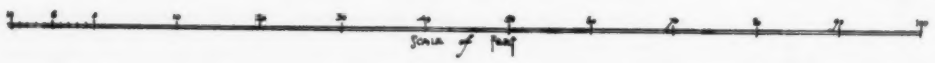
CITY : OF : LIVERPOOL :
LABOURERS : DWELLINGS :
BURLINGTON : ST : AREA : BLOCK : "A" :

DRAWING · NO 2



· MILE · END ·

· HALF · GROUND · FLOOR · PLAN



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